

**FINDING OF NO SIGNIFICANT IMPACT  
JOINT TASK FORCE SIX  
FENCE/ROAD IMPROVEMENT  
NACO, COCHISE COUNTY, ARIZONA**

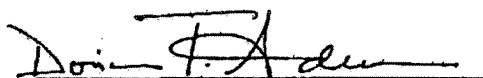
The Proposed Action would involve the extension of an existing landing mat fence located east of the Port of Entry (POE) for a distance of one mile near Naco, Arizona. From the ending point of the proposed landing mat fence, a proposed vehicle barrier would extend another three miles to the east. Additionally, two Arizona crossings (low water crossings) would be constructed at two separate ephemeral stream crossings west of the POE. Finally, the Proposed Action would involve improvements to the border road for a four-mile segment east of the POE and a six-mile segment west of the POE. The primary purpose of the Proposed Action is to assist in fulfilling the U.S. Border Patrol's (USBP) mission to reduce illegal drug trafficking along the U.S.-Mexico border by maximizing the effectiveness of the USBP. Approximately 70 U.S. Military personnel would be utilized for activities under the Proposed Action.

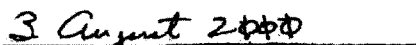
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A Programmatic Environmental Impact Statement (PEIS) was prepared in 1994 for the Immigration and Naturalization Service (INS) and Joint Task Force Six (JTF-6), proposed activities, which facilitate Law Enforcement Agencies (LEAs) missions to reduce illegal drug activity along the southwestern border of the U.S. The PEIS addresses the cumulative effects of past and reasonably foreseeable projects undertaken by JTF-6 for numerous LEAs in the four southwestern states (Texas, New Mexico, Arizona, and California). This Environmental Assessment (EA) for the Proposed Action tiers from the 1994 PEIS (U.S. Army 1994). Cooperating agencies involved with the Proposed Action include the U.S. Border Patrol, the INS, and JTF-6.

There would be no significant areas of environmental concern associated with the Proposed Action. Possible insignificant environmental issues associated with the proposed fence and low water crossing construction, installation of the vehicle barriers, and improvements to the surface road (i.e., air, geological resources, biological resources, cultural resources, and noise); however, these would be only temporary in nature and easily mitigated through sound engineering practices. Under the Proposed Action, there is a possible beneficial socioeconomic impact to the area in the form of a reduction in drug trafficking and related criminal activities. There would be no impact to land use, water resources, aesthetics or solid/hazardous waste generation or management as part of the Proposed Action.

Based on the results of the EA and the environmental design measures to be incorporated as part of the Proposed Action, it has been concluded that the Proposed Action will not have a significant adverse effect on the environment.

  
Dorian T. Anderson  
Brigadier General, U.S. Army  
Commander

  
Dale

**DRAFT  
ENVIRONMENTAL ASSESSMENT**

**JOINT TASK FORCE SIX  
PROPOSED FENCE AND ROAD  
IMPROVEMENT PROJECT  
NACO, COCHISE COUNTY, ARIZONA**

**Prepared for:  
Joint Task Force Six  
Fort Bliss, Texas**



**Prepared by:  
U.S. Army Corps of Engineers  
Fort Worth District**

**March 2000**

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*Final Environmental Assessment for the U.S. Border Patrol Station, Yuma, Arizona*

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## **FINDING OF NO SIGNIFICANT IMPACT**

### **1.0 NAME OF ACTION**

Environmental Assessment for the U.S. Border Patrol Station, Yuma, Arizona.

### **2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

A new U.S. Border Patrol Station (BPS) adjacent to the Yuma Sector Headquarters Complex on the southern edge of Yuma, Arizona is being proposed. The purpose of the new facility complex is to integrate and increase the efficiency of current operations, and to provide infrastructure for projected growth. After construction of the new facilities, the staffing would increase from 190 to 350 people. The selected site would be purchased by the U.S. Government to support the U.S. Border Patrol (USBP).

One of two possible alternative sites would be selected under the Proposed Action. The new BPS would cover approximately 50,000 square feet and would include such facilities as the main station, sally port, dog kennels, parking, seized vehicle temporary storage, fuel island, wash station, communication towers, and a two-bay vehicle maintenance shop. Two alternative sites are under consideration for construction of the BPS. Site 1 consists of twenty acres located immediately south of the Border Patrol Headquarters Complex, with its western boundary along Avenue A. Site 2 is a twenty-acre parcel located just south of Site 1, also bounded on the west by Avenue A. Both Sites 1 and 2 are within the city limits of Yuma. The construction is planned to be completed within approximately twelve to sixteen months.

#### **No Action Alternative**

Under this alternative, construction of the new BPS facility would not occur. Currently there is not enough room at the existing station to support the growth of future Border Patrol operations. While not moving to a new site would have few environmental impacts, the improved effectiveness and efficiency that would be provided by a new facility would not occur. The strategic objective of improving infrastructure to support the U.S. Immigration and Naturalization Service (USINS) mission and to retain qualified USBP employees would not be met.

### **3.0 ENVIRONMENTAL IMPACTS**

#### **3.1 Land Use**

Land use and transportation in the local area would not be significantly affected as a result of the Proposed Action. Although the proposed facility is located within an area zoned for agriculture, the surrounding land uses include commercial and light industrial areas. Under the doctrine of federal supremacy, the federal government is not subject to local or state land use or zoning regulations unless specifically consented to by Congress. Under the Federal Farmland Policy Protection Act, a Farmland Conversion Impact Rating form would need to be completed because the proposed sites are currently in farmland. Due to the proximity of the proposed sites to urban land and utilities, it is expected that there would be no concern related to converting either site to urban land.

#### **3.2 Biological Resources**

The proposed sites are currently in alfalfa production and desert shrubland vegetation and do not provide significant habitat for any threatened or endangered species or other important plants and wildlife. No significant impact to biological resources would be expected under the Proposed Action.

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*Final Environmental Assessment for the U.S. Border Patrol Station, Yuma, Arizona*

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### **3.3 Geology and Soils**

There would be no significant long-term effects on soil and geology. Impacts to soil would be temporary, during construction. The soil and geology have few limitations for construction of buildings. The susceptibility of the soil to wind erosion necessitates the installation of temporary erosion control measures during construction and permanent stabilization after completion of building construction. Stormwater detention basins would be used to intercept sediment during construction, according to the Stormwater Pollution Prevention Plan (SWPPP) that would be developed for the selected site.

### **3.4 Water Resources**

The USBP facilities would use the city water and sewer system, which has adequate capacity. Offsite discharge of stormwater would be stored in detention basins, meeting requirements for onsite stormwater detention by the city and state. This would be included in the site-specific SWPPP to be developed prior to start of construction. Potentially polluted water would be kept and handled separately from stormwater. No significant impacts to water resources are expected as a result of the Proposed Action. No impacts to wetlands or waters of the U.S. would occur.

### **3.5 Air Quality**

Yuma County is classified as being in non-attainment for PM<sub>10</sub> and in attainment for CO, NO<sub>2</sub>, SO<sub>2</sub>, ozone, and lead. During construction, the Proposed Action would result in a very slight increase in wind-blown dust but, due to the soil characteristics, this amount would be insignificant and would be minimized with the use of best management practices. No significant impacts would affect air quality as a result of the implementation of the Proposed Action.

### **3.6 Socioeconomics**

The proposed construction activities may provide a minor benefit to the local economy by creating a demand for goods and services during construction. No significant or adverse effects would result from the Proposed Action.

### **3.7 Environmental Justice**

No disproportionately high or adverse impacts on minority or low-income populations would occur, nor would there be any adverse impacts to children.

### **3.8 Noise**

The proposed sites are located within the city limits, so urban noises are common. Because of current land use patterns and human activity associated with vehicular traffic and airport operations, the construction, maintenance, and operations under the Proposed Action would not constitute a significant change from the baseline noise conditions. Since the Proposed Action does not involve construction in or near a residential area, no impact is expected. Noise attenuation would be needed in the proposed structures.

### **3.9 Cultural Resources**

None of the remains found, artifacts or features, exhibit characteristics consistent with criteria needed for inclusion on the National Register of Historic Places, and no recorded sites are documented. Therefore, the Proposed Action is unlikely to affect cultural resources. However, due to the extensive ground cover

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*Final Environmental Assessment for the U.S. Border Patrol Station, Yuma, Arizona*

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on the sites during the field surface survey, it is recommended that monitoring of the selected site be conducted at the time of construction.

### 3.10 Aesthetics

Impacts to aesthetics would be minimal as a result of the Proposed Action. It is expected that over time, industrial development would fill in areas to the west of the airport. While the selected site would change from agricultural to one of urban development, the proximity to the airport, other buildings, and development in the area would not create a stark contrast to the surrounding area.

### 4.0 CONCLUSION

On the basis of the findings of the environmental assessment, no significant impact is anticipated from the proposed project on human health or the natural environment. A Finding of No Significant Impact is warranted and an Environmental Impact Statement is not required for this action.

  
Mr. Rufus Johnson  
Acting Director of Facilities  
U.S. Immigration and Naturalization Service

4/17/02  
Date

**DRAFT**  
**FINDING OF NO SIGNIFICANT IMPACT**  
**JOINT TASK FORCE SIX OPERATION**  
**FENCE/ROAD IMPROVEMENT PROJECT**  
**NACO, COCHISE COUNTY, ARIZONA**

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In addition to the Proposed Action, there were six other alternatives evaluated as part of this environmental impact analysis: 1) No-Action Alternative; 2) Alternative Fence Construction Materials; 3) Alternative Distance from the International Border; 4) Construction of New Roads; 5) Alternative Materials for Stream Crossings; and 6) Construction of Clear-Span Bridges or Box Culverts. The No-Action Alternative was carried throughout the analysis, and would be reflected in the baseline environmental conditions of the area. Under the No Action Alternative, there would be the continued socioeconomic concerns relating to the illegal drug trafficking and criminal activity. The remaining five alternatives were eliminated from further consideration because they would not assist the USBP in the accomplishment of their mission, offered a greater economic impact, and offered the same if not greater, potential for environmental concerns as the Proposed Action.

A Programmatic Environmental Impact Statement (PEIS) was prepared in 1994 for the Immigration and Naturalization Service (INS) and Joint Task Force Six (JTF-6), proposed activities which facilitate Law Enforcement Agencies (LEAs) missions to reduce illegal drug activity along the southwestern border of the U.S. The PEIS addresses the cumulative effects of past and reasonably foreseeable projects undertaken by JTF-6 for numerous LEAs in the four southwestern states (Texas, New Mexico, Arizona, and California). This Environmental Assessment (EA) for the Proposed Action tiers from the 1994 PEIS (U.S. Army 1994). Cooperating agencies involved with the Proposed Action include the U.S. Border Patrol, the INS, and JTF-6.

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Based on the results of the EA and the environmental design measures to be incorporated as part of the Proposed Action, it has been concluded that the Proposed Action will not have a significant adverse effect on the environment.

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Dorian T. Anderson  
Brigadier General, U.S. Army  
Commander

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Date

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## **EXECUTIVE SUMMARY**

As a result of the high rate of violent crime, the continual damage to our Nation's health and economy, and strains on vital relationship with international allies; the United States (U.S.) Congress developed the National Drug Control Strategy (NDCS) and incorporated the Department of Defense (DoD) into this new plan. The Secretary of Defense established Joint Task Force Six (JTF-6) to coordinate all DoD counter-drug support to Federal, State, and local law enforcement agencies' (LEAs) in an effort to curtail drug smuggling activities into the U.S. and protect national security. JTF-6 was assigned to assist LEAs who have drug interdiction responsibilities in the southwestern U.S. by providing general operational and engineering support. In addition, the assistance would provide all or part of the mission-essential training elements for the military unit involved.

A Programmatic Environmental Impact Statement (PEIS), prepared in 1994 for the Immigration and Naturalization Service (INS) and JTF-6, proposed projects that facilitate LEA missions to reduce illegal drug activity trafficking. The PEIS addresses the cumulative effective of past and reasonably foreseeable projects undertaken by JTF-6 for numerous LEAs in the four southwestern states (Texas, New Mexico, Arizona, and California). This Environmental Assessment (EA) tiers from the 1994 PEIS (U. S. Army 1994). Cooperating agencies involved with the Proposed Action include the U.S. Border Patrol (USBP), the INS, and JTF-6.

The purpose of the Proposed Action is to minimize the influx of illegal contraband (i.e., drugs) from entering the U.S., and to reduce crime along the border area through the use of deterrent measures and by maximizing the effectiveness of the USBP. This EA addresses the potential impacts associated with a proposed fence and road improvement project along the U.S.-Mexico border in Cochise County, Arizona. The Proposed Action would involve the extension of an existing landing mat fence located east of the Port of Entry (POE) for a distance of one mile near Naco, Arizona. From the ending point of the proposed landing mat fence, a proposed vehicle barrier would extend another three miles to the east. Additionally, two Arizona crossings (low water crossings) would be constructed at two ephemeral stream crossings west of the POE. Finally, the Proposed Action would involve improvements to the border road for a four-mile segment east of the POE and a six-mile segment west of the POE.

In addition to the Proposed Action, there were six other alternatives evaluated as part of this environmental impact analysis: 1) No-Action Alternative; 2) Alternative Fence Construction Materials; 3) Alternative Distance from the International Border; 4) Construction of New Roads; 5) Alternative Materials for Stream Crossings; and 6) Construction of Clear-Span Bridges. The No-Action Alternative was carried throughout the analysis, and would be reflected in the baseline environmental conditions of the area. Under the No Action Alternative, there would be the continued socioeconomic concerns relating to the illegal drug trafficking and criminal activity. The remaining five alternatives were eliminated from further consideration because they would not assist the USBP in the accomplishment of their mission, offered a greater economic impact, and offered the same if not greater, potential for environmental concerns as the Proposed Action.

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Potential impacts for this project were classified at one of three levels: significant, insignificant (or negligible), and no impact. Significant impacts (as defined in CEQ guidelines 40 CFR 1500-1508) are effects that are most substantial, and therefore should receive the greatest attention in decision-making process. Insignificant impacts would be those impacts that result in changes to the existing environment that could not be easily detected. No-impact actions would not alter the existing environment.

There would be no significant areas of environmental concern associated with the Proposed Action. Possible insignificant environmental issues associated with the proposed fence and low water crossing construction, installation of the vehicle barriers, and improvements to the surface road (i.e., air geological resources, biological resources, cultural resources, and noise); however, these would be only temporary in nature and easily mitigated through sound engineering practices. Under the Proposed Action, there is a possible beneficial socioeconomic impact to the area in the form of a reduction in drug trafficking and related criminal activities. There would be no impact to land use, water resources, aesthetics or solid/hazardous waste generation or management as part of the Proposed Action.

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## **1.0 INTRODUCTION**

### **1.1 PROJECT BACKGROUND**

The United States (U.S.) is experiencing high levels of drug use and ensuing elevated levels of drug-related crime. Negative impacts of widespread drug use on society continue to affect the work force, educational and medical systems, general law and order, and traditional family values and structure. As a result of these high levels of drug-related crime, the continual damage to our Nation's health and economy, and strains on vital relationships with international allies; the U.S. Congress developed the National Drug Control Strategy (NDCS) and incorporated the Department of Defense (DoD) in the new strategy. The Secretary of Defense established Joint Task Force Six (JTF-6) in November 1989 to coordinate all DoD counterdrug support to Federal, State, and local law enforcement agencies (LEAs) in an effort to curtail drug smuggling activities into the U.S. and protect national security. As a Joint Service Agency, JTF-6 was assigned to assist LEAs that have drug interdiction responsibilities in the continental U.S. by providing general operational and engineering support. In addition, this assistance would provide opportunities for mission-essential training for the military unit involved.

This Environmental Assessment (EA) addresses potential impacts associated with a proposed four-mile fence/barrier construction and 10-mile road improvement project on the U.S.-Mexico border in Cochise County, Arizona. This document is tiered from the Programmatic Environmental Impact Statement (PEIS) completed for a broad scope of JTF-6 activities along the U.S.-Mexico border (U.S. Army 1994). As specific measures are developed for exact locations, EA's have been prepared and tiered from the PEIS, to address site-specific environmental constraints, including cumulative impacts of past, present, and foreseeable actions. This EA was prepared by Ecological Communications Corporation (EComm) under contract to the Fort Worth District Army Corps of Engineers (USACE).

### **1.2 LOCATION OF PROPOSED ACTION**

The proposed project site is located along the U.S.-Mexico border in the vicinity of the City of Naco in Cochise County, Arizona. The total project area would cover a narrow corridor along the international border for a distance of approximately 10 miles. The proposed fence would involve the extension of the existing landing mat fence located east of the Port of Entry (POE) for a distance of one mile. From the ending point of the proposed landing mat fence, a proposed vehicle barrier would extend another three miles to the east. Figure 1.0 shows the locations of the Proposed Action activities in the Eastern Portion of the project area and Figure 2.0 shows the locations of the Proposed Action activities in the Western Portion of the project area.



Figure 1.0  
Location of Proposed Action Activities on Eastern Portion of Project  
Area, Naco, Cochise County, Arizona.

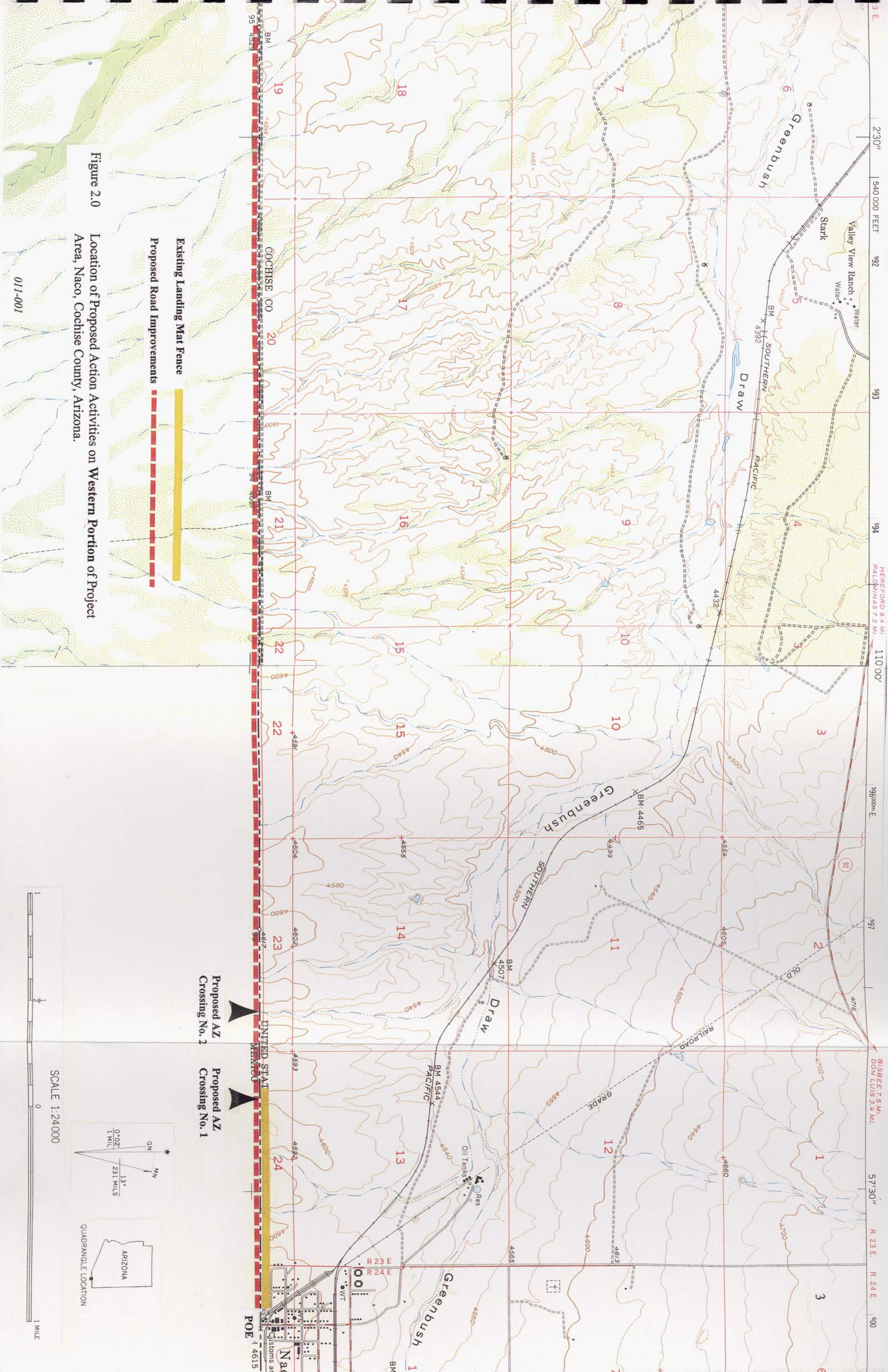


Figure 2.0

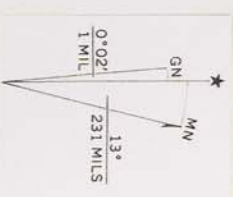
Location of Proposed Action Activities on Western Portion of Project Area, Naco, Cochise County, Arizona.

Existing Landing Mat Fence  
Proposed Road Improvements

011-001



SCALE 1:24,000



### **1.3 PURPOSE AND NEED**

The purpose of the Proposed Action and Alternatives is to decrease or eliminate the influx of illegal contraband (i.e., drugs, people, vehicles, etc.) from entering the U.S. and to reduce associated crime along the international border. The goal of the proposed project is to maximize the effectiveness of the U.S. Border Patrol (USBP) in their deterrent efforts. The Proposed Action involves several elements, including the following: construction of a landing mat fence for approximately one mile east of the POE; replacement of the existing vehicle barriers and installation of new barriers for approximately three miles east of the proposed fence (east of the POE); road improvements on the existing border access road for approximately four miles east and 11 miles west of the POE; and construction of two Arizona crossings (low water crossing) along the border access road west of the POE. The majority of this area currently consists of cleared roadway or undeveloped land used for grazing pasture. Photographs of the site conditions are presented in Appendix A.

Overland smuggling poses a significant threat in these areas. Foot traffic from south to north across the border was evident in the general project area, as well as vehicle tracks over the driveable portions of the area. Construction of the proposed fencing and the proposed improvements to the existing vehicle barrier would assist in reducing the flow of illegal entry into the U.S. The proposed road improvements would increase the effectiveness and response times of the USBP agents in the apprehension of drug traffickers, thereby reducing illegal traffic into the southernmost neighborhoods of Naco, Arizona and the surrounding areas.

According to information provided by the USBP, Naco Station, 16,007 pounds of illegal narcotics were seized at the Naco checkpoint in Fiscal Year (August through September) 1998, and this total increased to 21,283 pounds in Fiscal Year 1999. These numbers represent activities in the USBP area that encompasses the City of Naco and its immediate outlying areas. Alien apprehensions for this section have also risen steadily, totaling 1,205 in 1991; 1,844 in 1992; 2,295 in 1993; 2,518 in 1994; 4,477 in 1995; 11,425 in 1996; 13,821 in 1997; 19,343 in 1998, and 63,417 in 1999. According to USBP personnel, the areas to be covered under the Proposed Action are those areas having the highest movement of illegal drugs. The proposed fencing and vehicle barriers in these areas would reduce the ease with which illegal drugs are crossing into the U.S.

A secondary benefit of the Proposed Action, as well as a required goal for the DoD, is to provide training opportunities for U.S. military units. This training would include general operational and engineering support. This assistance would satisfy all or part of the units' mission-essential task list. Therefore, military units, through the JTF-6 program, could provide all the construction support for the proposed USBP project. Over the past several years, the USBP has been the primary beneficiary of JTF-6 support functions. However, any law enforcement agency involved in interdiction of illegal drugs may request assistance from JTF-6.

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## 1.4 ORGANIZATION OF THE DOCUMENT

Chapter 1.0 of this EA contains the background and location of the Proposed Action, along with the purpose and need, and any regulations associated with the Proposed Action. Chapter 2.0 gives a detailed analysis of the Proposed Action and all reasonable alternatives, including those that were considered but eliminated from detailed analysis. Chapter 3.0 describes the baseline environment conditions against which the Proposed Action and alternatives are evaluated. These environmental conditions include information on soils, air quality, land use, hydrology, biological resources, noise, cultural resources, and the current socioeconomic conditions of the area. Chapter 4.0 describes the environmental consequences of the Proposed Action and alternatives. Chapter 5.0 presents environmental design measures. Chapter 6.0 describes the public involvement for this project. Chapter 7.0 lists the preparers involved in the preparation of this document, and Chapter 8.0 presents references cited. Appendices included are: (A) Site Photographs, (B) Federal Air Pollutant Standards, (C) Threatened and Endangered Species, (D) Consultation Letters, (E) Notice of Availability, and (F) Storm Water Pollution Prevention Plan.

## 1.5 APPLICABLE ENVIRONMENTAL STATUTES AND REGULATIONS

This EA was prepared pursuant to Section 102 of the National Environmental Policy Act of 1969 (NEPA), as implemented by the regulations promulgated by the President's Council on Environmental Quality (CEQ) [40 Code of Federal Regulations (CFR) Parts 1500-1508]. This EA should provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) (40 CFR 1508.9). Additionally, this EA complies with Army Regulation (AR) 200-2, Environmental Effects of Army Actions (December 23, 1988). Brief summaries of the Federal and State laws, regulations, executive orders (EO), and other entitlements that may be applicable to the proposed project are provided in the following sections.

### 1.5.1 Environmental Policy

NEPA (42 United States Code [USC] 4321 et seq.), as implemented by the regulations promulgated by the President's CEQ (40 CFR Parts 1500-1508), establishes national policy, sets goals, and provides the means to prevent or eliminate damage to the environment. The principal objectives of NEPA are to ensure the careful consideration of environmental aspects of proposed actions in Federal decision-making processes and to look at alternatives that may provide a more environmentally acceptable solution. Additionally, NEPA ensures that environmental information is made available to decision makers and the public before decisions are made and actions are taken.

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### **1.5.2 Executive Order 11514, Protection and Enhancement of Environmental Quality**

EO 11514, Protection and Enhancement of Environmental Quality, as amended by EO 11991, sets the policy for directing the Federal government in providing leadership in protecting and enhancing the quality of the nation's environment.

### **1.5.3 Executive Order 12898, Environmental Justice**

The purpose of EO 12898 is to avoid the disproportionate placement of adverse environmental, economic, social, or health impacts from proposed Federal actions and policies on minority and low-income populations.

### **1.5.4 Clean Air Act**

The Clean Air Act (CAA) amendments of 1990 established Federal air quality standards. According to air quality information received from Environmental Protection Agency (EPA) Region 9, Cochise County is in attainment with established national and state air quality standards for all criteria pollutants.

### **1.5.5 Clean Water Act**

The Clean Water Act (33 USC 1251 et seq., as amended) establishes Federal limits, through the National Pollutant Discharge Elimination System (NPDES), on the amounts of specific pollutants that may be discharged to surface waters in order to restore and maintain the chemical, physical, and biological integrity of the water. Section 404 of the Clean Water Act regulates the discharge of fill material into waters of the U.S. No NPDES permit would be required for the proposed project. As the total area of disturbance from the proposed projects is greater than five acres in size, a stormwater pollution prevention plan is included as Appendix F.

### **1.5.6 Endangered Species Act**

The Endangered Species Act (16 USC 1531-1543) requires Federal agencies to determine the effects of their actions on endangered or threatened species of fish, wildlife, plants, and critical habitats, and to take steps to conserve and protect these species.

### **1.5.7 Cultural Resources Regulations**

The National Historic Preservation Act of 1966 (16 USC 470 et seq., as amended, Section 106) requires Federal agencies to determine the effect of their actions on cultural resources, and to take certain steps to ensure these resources are located, identified, evaluated, and protected. The Archaeological Resources Protection Act (16 USC 470a-11, as amended) protects archaeological resources on Federal lands. If archaeological resources are discovered that may be disturbed

during site activities, the NHPA would require permits for excavating and removing the resources.

### **1.5.8 Other Regulations**

Additional Federal, State, local regulations and EOs which may apply to the Proposed Action and alternatives are listed below:

- American Indian Religious Freedom Act of 1978
- Archaeological Resource Protection Act
- Arizona Native Plant Law
- Arizona Air Quality Standards
- Bald Eagle Protection Act (Public Law 90-535)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Public Law 96-510), as amended by the Superfund Amendments and Reauthorization Act (SARA) (Public Law 99-499), 1986
- Federal Compliance with Pollution Control Standards
- Federal Facilities Compliance Act
- Fish and Wildlife Coordination Act, as amended, USC 661, et seq.
- Hazardous Materials Transportation Act (HMTA), 1975
- Migratory Bird Treaty Act
- Native American Graves Protection and Repatriation Act of 1990
- Resource Conservation and Recovery Act (RCRA) (Public Law 94-580), 1976
- Safe Drinking Water Act (SDWA), 1974
- Solid Waste Disposal Act, 1980
- Toxic Substances Control Act (TSCA) (Public Law 94-469)
- Watershed Protection and Flood Prevention Act, 16 USC 1101, et seq.
- Wetlands Conservation Act (Public Law 101-23)

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## 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action and all reasonable alternatives, including the No-Action Alternative. The Proposed Action would involve improvements to various elements of the border control system along the U.S.-Mexico border, south of Naco, Arizona. Under the No-Action Alternative, the current border control features would remain as they are and USBP efforts to curtail illegal drug trafficking would remain unchanged. Other alternatives initially considered were eliminated from further analysis after they were deemed not feasible for a variety of reasons.

### 2.1 PROPOSED ACTION

The primary purpose of the Proposed Action is to enhance the USBP's drug enforcement and interdiction abilities. The Proposed Action calls for construction of additional landing mat fencing and metal vehicle barriers, improvements to border access roads, and construction of two Arizona crossings (low water crossing) along the U.S.-Mexico border, in the vicinity of Naco, Arizona. Specific elements of the Proposed Action include the following:

- Extend the existing landing mat fence for one mile further to the east from the end of the current fence, located approximately one mile east of the POE.
- Replacement of the existing vehicle barrier and construction of a new vehicle barrier beginning at the eastern end of the proposed new landing mat fence and extending approximately 3.0 miles further to the east.
- Improvement of existing border access roads for approximately four miles east of the POE and six miles west of the POE.
- Installation of two Arizona crossings on the border access road at two ephemeral stream crossings west of the POE.

The proposed landing mat border fence would be constructed with surplus military supplies similar to the adjacent fence in this area. It would be approximately 12 feet high. Posts would consist of 15-foot drill pipe of four- to five-inch outside diameter, placed five feet below ground in concrete and spaced eight feet apart. The post holes would be 16 to 18 inches in diameter to provide the necessary support for the structure. The landing mat sections would be welded together and attached to the posts with angle iron.

The present vehicle barrier consists of sections of concrete pipe laid end to end. Illegal entrants are able to roll the pipes aside to allow vehicles to cross the border at points other than the POE, making replacement of the existing barrier necessary. Construction of the proposed vehicle barrier would involve construction of an approximately 4-foot high barrier of vertical posts spaced approximately

five to eight feet apart, topped with horizontally aligned railroad rail. These barriers will be inspected frequently for repairs or on an as-need basis.

Road improvements would consist of grading within the existing roads and filling with existing material. No paving material (i.e. asphalt or concrete) would be included. Fill material would not be excavated from washes in the area or from upland areas that would be particularly sensitive to erosion. If additional fill material is required beyond what is present within the existing road bed, only compactable, clean material obtained from commercial sources would be used. Roads would not be widened during the maintenance process.

Construction of the two Arizona crossings would consist of paving the roads through the ephemeral stream crossings with concrete. There would be no subsurface culverts or drainage structures installed; instead, water would be allowed to flow over the road.

If the Proposed Action is implemented on the basis of this EA and a FONSI is issued, the proposed project may begin when a military engineering unit is available in 2000. The project would take approximately six to eight weeks to complete. U.S. military engineer battalion personnel would perform the proposed project installation and road repair. It is anticipated that approximately 50 to 70 military personnel would be required to complete the Proposed Action and would be housed in Naco or Sierra Vista, Arizona. Personnel completing the Proposed Action would be expected to work between 7:00 a.m. and 7:00 p.m., six days a week during the installation period.

Equipment to be used during construction may include: integrated tool carriers, backhoes with augers or an auger truck, backhoes with breakers, bucket loaders, cement mixers, flat bed trucks, graders, water trucks, forklifts, bulldozers, vibratory compactors, semi-trailers, tractors, air compressors, and generators. Equipment and construction materials would be stored at a prefabrication yard in a previously disturbed area.

Existing roads would be utilized for transport of equipment and personnel. Existing turnouts would also be used by equipment during construction to eliminate unnecessary impacts to resources outside of the Proposed Action area. Through an environmental briefing, all personnel would be informed about the limits of the construction area and actions permitted within and outside of that area. Additionally, construction limits would be flagged to ensure that the proposed activities stay within the construction area boundaries.

## **2.2 NO-ACTION ALTERNATIVE**

Under the No-Action Alternative, none of the proposed improvements would be constructed. The area would remain as it currently exists and USBP efforts to curtail illegal drug trafficking would remain unchanged. Although no significant adverse impacts would occur if implemented, the No-Action Alternative would not support the USBP's efforts in effectively reducing drug smuggling and trafficking near Naco, Arizona. The associated violent crime would continue

along the project area. Therefore, the No-Action Alternative may reduce the USBP's ability to fulfill their mission as described in Chapter 1.0.

## **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS**

### **2.3.1 Alternative Construction Materials**

This alternative would apply to the proposed fence construction materials. Alternative fencing materials such as chain-link, barbed wire, or wood have been considered in the past by the USBP. These materials are not considered to be as effective as the proposed landing mat fencing material in accomplishing the USBP's mission. Chain-link fencing requires a high level of maintenance and is not resistant to cutting and/or vandalism. Likewise, barbed wire or wooden fences also require a high level of maintenance and are easily traversed or compromised. Although these materials may offer some level of deterrence to drug trafficking, they would require constant maintenance due to vandalism and exposure to the elements. Furthermore, the environmental impacts that would result from these types of fence materials would be similar to those of the proposed landing mat fence, yet they would pose a greater economic impact on the USBP's budget. Therefore, this alternative was not carried forward for further analysis.

### **2.3.2 Alternative Distance from the International Border**

This alternative would apply to the location of the proposed fence and vehicle barrier. At present, the existing border fence and vehicle barriers are located approximately two feet from the international border. One alternative discussed for this project included the construction of the proposed fence and an improved vehicle barrier a further distance away from the border. Concerns with this alternative included land acquisition of new areas, disturbance in areas not previously disturbed by existing border control features, right-of-entry for construction activities, and additional costs to connect to the existing fence already located at the five-foot distance. Due to these constraints, this alternative was eliminated from further consideration and was not carried forward through the analysis.

### **2.3.3 Construction of New Roads**

This alternative would apply to the proposed road improvements. Construction of new roads rather than repair of existing roads would require land and/or right-of-way clearance, as well as additional engineering planning and construction. This alternative would thus require additional time, be very costly, and would have the potential for increased environmental impacts. Although this alternative would increase the USBP's ability to perform drug interdiction activities efficiently, the additional planning, cost, and environmental impacts currently limit its feasibility. Therefore, this alternative was not carried forward for further analysis.

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**2.3.4 Alternate Materials for Stream Crossings**

This alternative would apply to the proposed construction of Arizona crossings across two ephemeral stream crossings west of the POE. The same desired road protection achieved by paving the crossings with concrete would also be initially accomplished by the use of an aggregate material such as gravel or rip-rap. The effectiveness of an aggregate material base, however, would diminish over time as flow in the channel washed the material away. Such materials would therefore require regular maintenance and replacement. Furthermore, the rougher surface of an aggregate material would increase wear and tear on USBP vehicles and might result in longer response times. Because the use of an aggregate material has several disadvantages compared to the proposed concrete paving and yet results in the same environmental impacts, this alternative was rejected for further consideration.

**2.3.5 Construction of Clear-Span Bridges**

This alternative addresses alternatives to the construction of the two Arizona crossings. It would entail the construction of bridge supports in the crossings and a paved road from bank to bank across the supports. This alternative would require considerably more time and money than the Proposed Action in terms of both engineering planning and labor and materials for construction. The installation of bridge supports into the subsurface might also increase the potential for erosion, while the presence of the bridge supports in the channel could disrupt normal flow patterns and result in further erosion.

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### 3.0 AFFECTED ENVIRONMENT

The affected environment is the baseline against which potential impacts caused by the Proposed Action and alternatives are assessed. This chapter focuses on those resources specific to the proposed project area that have the potential to be affected by activities brought on by fence construction, replacement of the existing vehicle barrier, minor road improvements, and changes in USBP activities resulting from the construction activities. Resources that would most likely be affected (e.g., air, soil, cultural, biological resources, and noise) by the Proposed Action or alternatives are described in more detail than those not likely to be affected (e.g., water, socioeconomic, and aesthetics).

#### 3.1 AIR RESOURCES

Air resources describe the existing concentrations of various pollutants and the climatic and meteorological conditions that influence the quality of the air. Precipitation, wind direction, wind speed, and atmospheric stability are factors that determine the extent of pollutant dispersion.

##### 3.1.1 Climate and Meteorology

Climate in the vicinity of Naco, Arizona is characterized by mostly sunny days with hot summers and mild winters. The average summer temperature is 81° Fahrenheit (F) and winter temperatures average 44° F at the lower temperatures in the upper teens to highs in the 60's and 70's. Winds for most of the year generally blow from the south and east. Precipitation in the summer is due to moisture from the south; and winter precipitation is due to low pressure systems from the west. The average yearly rainfall is approximately 15 inches. Maximum rainfall occurs in the summer monsoon season (July, August, and September). During the winter months, snow accumulations range from 0 to approximately 6 inches. The average relative humidity ranges from 50 percent in the mornings to 33 percent in the afternoon (U.S. Army 1994).

##### 3.1.2 Air Quality

Cochise County, Arizona is in EPA Region 9 and is currently in attainment with established National and State air quality standards for all pollutants (Appendix B) (U.S. EPA 1996). According to EPA's Breathing Easier 1996 publication, Region 9 has shown a substantial improvement in air quality over the last 10 years. Despite an increase in automobile travel of almost 50 percent over the past decade, air pollutant levels have decreased overall by about one-third. This decrease can be seen in both a reduction in the number of days in which the air pollutant levels exceeded national air quality standards and a reduction in the actual air pollutant concentration levels for six major pollutants.

The following characterization of the baseline atmospheric environment is based on the ambient air quality and applicable rules, regulations, and standards for the Naco area. Arizona standards are identical to the National Ambient Air Quality Standards (NAAQS) published by the EPA as directed by the CAA.

Air quality in both the eastern and western sections of the proposed project area is typically very good. Prevailing meteorological conditions are not conducive to the concentration of pollutant emissions. Daily winds tend to disperse adverse air emissions. The major source of gaseous criteria pollutants is from urban activities in Naco, while particulate matter (PM<sub>10</sub>) is produced by a combination of windblown dust and uncontrolled burning and heavy industry conducted in Mexico near the U.S.-Mexico border. Heavy industry near the Naco area includes a cement plant located approximately one mile southeast of Naco and secondary plants located near the Mexican town of Cananea, approximately 30 miles southwest of Naco (U.S. Army 1994).

The Arizona Department of Environmental Quality (ADEQ), Monitoring Section is responsible for monitoring air quality in the area and currently has one PM<sub>10</sub> station and two MET (meteorological) stations located in Douglas, Arizona. The closest air monitoring station monitoring for the remaining priority pollutants is located in Tucson, Arizona (U.S. Army 1997b). Like the Tucson area, the Naco area is not expected to violate any of the air standards.

## **3.2 LAND USE**

The proposed project area consists mainly of undeveloped land or border access roads. The proposed project area is located along the U.S.-Mexico border. This area consists of either undeveloped land adjacent to the dirt access roads or land used for livestock.

Access to those areas located adjacent to the city limits of Naco would be provided by public roads. Access to all proposed construction sites is provided by unimproved dirt or gravel roads. The undeveloped areas within the proposed project boundaries are utilized primarily by the USBP agents and local landowners.

## **3.3 GEOLOGICAL RESOURCES**

Geological resources include physical surface and subsurface features of the earth such as topography, geology, soils, and the seismic nature of the area. These features are discussed in the following sections.

### **3.3.1 Geology**

Southeast Arizona lies within the Basin and Range Physiographic Province and is characterized by intensely deformed and intruded strata within numerous relatively elevated and depressed fault blocks. The Basin and Range Province is subdivided into two physiographic sub-provinces,

the Mexican Highlands and the Sonoran Desert. The proposed project site lies within the Mexican Highland sub-province (U.S. Army 1995).

The project area is located in the Upper San Pedro Basin. The basin consists of the northwest-trending San Pedro River Valley and the surrounding mountains. Elevations range along the valley floor from 4,200 feet above mean sea level at the International Boundary to 3,300 feet above mean sea level at "the Narrows", which forms the basin's northern boundary. The mountains bordering the basin range from 5,000 to nearly 10,000 feet in elevation. The nearest mountains, and immediately north of the project area, are the Mule Mountains. The highest point in the general area is Huachuca Peak, with an elevation of 8,406 feet. Elevations in the proposed project area range from 4,200 to 4,800 feet above mean sea level.

### **3.3.2 Soils**

The main soil association in the proposed project area is the Tubac-Sonoita Grabe Association. Information on these soils was obtained from the Natural Resource Conservation Service (NRCS) in Tucson Arizona (NRCS, 1974). This association consists of well-drained soils on valley plains and wide floodplains in the Santa Cruz, Sulphur Springs, and San Simon valleys. The soils formed in mixed old and recent alluvium derived mostly from igneous rocks. Tubac and the similar Continental soils make up about 50 percent of the association. Sonoita soils are approximately 20 percent, and Grabe soils are 20 percent with minor soils making up approximately 10 percent.

Good yields of cotton, grain sorghum, alfalfa, small grain and vegetables are produced when the soils of this association are irrigated. The native vegetation is mostly grass in the higher elevations and desert shrubs and cacti at the lower elevations. Principal grasses are gramas, plains lovegrass, tobosa and annuals. Shrubs are mesquite, whitethorn, catclaw, burroweed, wolfberry, and cacti. Paloverde and ironwood occur at lower elevations. Under good management, these soils have fair to good potential for the production of livestock forage. Many areas are in poor condition from overgrazing due to their easy accessibility.

Factors limiting the potential of these areas for development of homesites and other community uses are slow permeability and clayey subsoils in the Tubac and Continental soils and the possibility of flooding of Grabe soils. Sonoita soils are well suited for community uses.

## **3.4 WATER RESOURCES**

The following sections describe the surface and groundwater sources, water quality and quantity, and surface and subsurface water movement. The hydrological cycle results in the transport of water into various media such as the air, the ground surface, and subsurface. Natural and human-induced factors determine the quality of water resources.

### **3.4.1 Groundwater**

The proposed project area is located in the upper San Pedro Basin as designated by the Arizona Department of Water Resources (ADWR). Groundwater is found in two major units in this basin: 1) the streambed alluvium that forms the San Pedro River's channel and floodplain, and 2) the alluvial basin-fill sediments that fill the valley. The streambed alluvium is more permeable than the basin-fill, but the alluvium's limited areal extent only makes it an important local aquifer in the central valley along the San Pedro River's floodplain. The alluvial basin-fill sediments, consisting of the younger basin-fill, older basin-fill, band basal conglomerate, form the basin's principal aquifer. Consolidated bedrock found in the surrounding mountains yields only small amounts of water from localized aquifers.

According to the ADWR, the hydrologic characteristics of the regional aquifer vary widely with the degree of compaction and the extent of fine-grained layers in the basin-fill. The younger and older basin-fill units are generally fair-to-good aquifers and provide the bulk of water pumped from the regional aquifer. Well yields of 100 to 2,800 gallons per minute have been reported from the basin-fill aquifer. The basal conglomerate unit generally is tightly-cemented, but where weakly-cemented or fractured by faults, well yields of several hundred gallons per minute have been reported (ADWR 1998).

Groundwater in the basin-fill is found in both unconfined (water table) and confined (artesian) conditions. Depth to water in unconfined areas of the basin-fill in 1978 ranged from 50 to 570 feet below land surface. Water levels are generally stable in the basin except in the Fort Huachuca-Sierra Vista area where groundwater pumpage has created a large cone of depression. Depth to groundwater in the artesian aquifer is encountered around 500 to 1,000 feet below land surface (ADWR 1998).

Groundwater movement in the basin is from the higher elevations in the mountains towards the valley and then northwest along the riverbed. Groundwater moves readily between the younger and older basin-fill units and between the streambed alluvium as the younger basin-fill unit. In the confined areas, water from the artesian aquifers may leak upwards into the water-table aquifer. According to information from the ADWR, the total amount of groundwater in storage in the Upper San Pedro basin is estimated to be approximately 59 million acre-feet (ADWR 1998).

Mountain-front recharge is the main source of recharge for the regional aquifer and streambed infiltration is the main source of recharge for the streambed alluvium in the San Pedro River floodplain. Groundwater recharge estimates are 29,000 acre-feet per year from streambed infiltration and mountain-front recharge, and 900 acre-feet per year from underflow into the basin from Mexico (ADWR 1998).

### **3.4.2 Surface Water**

The San Pedro River is the basin's major surface water drainage. The San Pedro River enters the basin at the International Boundary near Palominas, Arizona, and flows northwest for approximately 62 miles before leaving the basin north of Benson at "the Narrows." The San Pedro River is mostly ephemeral and only flows in response to local rainfall. The river does have a perennial stretch of about 18 miles between Hereford and a point just south of Fairbank. The perennial reach, near Charleston, is created by bedrock that forces groundwater to the surface. The proposed project area is located approximately 5 miles southeast from the San Pedro River. Within the proposed project area there are several minor unnamed wash and drainage ways. Larger washes located within the proposed project area include small arms of the Greenbush draw in both the eastern and western sections. This wash basin is located within the western section of the proposed project area.

### **3.4.3 Water Quality**

The quality of groundwater in the Upper San Pedro basin has been classified by the ADWR as suitable for most uses. Irrigation is the major water user in the basin with approximately 12,700 acres of land irrigated in the basin. Known groundwater-quality problems existing in the Upper San Pedro River basin include nitrate contamination of groundwater near St. David and sulfate contamination in the Bisbee-Naco area. In St. David, groundwater is contaminated with nitrates, lead, and sulfates, potentially due to the operation of a nearby explosive and chemical manufacturing firm. The Apache Powder Company has been identified as a past concern for groundwater contamination; however, this facility is located more than 45 miles southwest of the proposed project area.

In the Bisbee-Naco area, the infiltration of leachate from a tailings pond near Warren, northeast of Naco, Arizona, appears to be contributing sulfate to the groundwater. This site is located approximately 10 miles from the proposed project area. There is no known groundwater contamination within or adjacent to the proposed project area (ADWR 1998).

## **3.5 BIOLOGICAL RESOURCES**

Biological resources include native plants and animals in the region around the proposed project site. The proposed project area supports a plant community defined as semidesert grassland, a perennial grass-scrub community that is usually located between desert scrub and higher elevation plant communities (Brown 1982). This habitat type is found in southeastern Arizona, southwestern New Mexico, and northern Mexico between elevations of 4,000 and 8,000 feet and receives an annual rainfall between 11 and 17 inches per year.

### **3.5.1 Vegetation**

The principal biotic community that dominates the majority of the proposed project area is considered as semidesert grassland. This community is dominated by grama grass – scrub series, black grama (*Bouteloua eripoda*) – velvet mesquite (*Prosopis velutina*) association on the rolling hills and ridges that characterize the study area. Other common grasses associated with this series include Rockroth gramma (*Bouteloua rothrockii*), Lehmann's lovegrass (*Eragrostis lehmanniana*), Arizona cottontop (*Digitaria californica*), and sprucetop grama (*Bouteloua chondrosioides*).

Shrubby species found in this community include squawbush (*Rhus trilobata*), desert broom (*Baccharis sarothroides*), and snakeweed (*Gutierrezia sarothrae*). Agaves (*Agave parryi*) were also observed primarily along the existing access road and proposed project site. Small stands of ocotillo (*Fouquieria splendens*) were observed in several areas, along with small stands of scattered evergreen oaks, including Emory oak (*Quercus emoryi*) and Mexican blue oak (*Quercus oblongifolia*).

Vegetation at the proposed project site was sparse in many places and nonexistent in others. Specific vegetation observed in both the eastern and western portions of the proposed project area included agave, fairy duster (*Calliandra eriophylla*), mesquite (*Prosopis juliflora*), desert broom, catclaw acacia (*Acacia greggii*), white or scrub oak (*Quercus spp.*), prickly pear (*Opuntia spp.*), yucca (*Yucca elata*, *Y. baccata*), paloverde (*Cercidium floridum*), beargrass (*Nolina microcarpa*), croton (*Croton corymbulosus*), and Johnsongrass (*Sorghum halpense*). Vegetation throughout the proposed project area has been previously disturbed through grazing, previous use, and the development of access roads.

### **3.5.2 Wildlife**

Common reptiles that could be found within the general project area include the Sonora Salamander (*Ambystoma stebbinsi*), Couch's Spadefoot (*Scaphiopus couchi*), western spadefoot (*S. hammondi*), Tarahumara frog (*Rana tarahumarae*), Colorado River toad (*Bufo alvarius*), Great Plains toad (*B. cognatus*), red-spotted toad (*B. punctatus*), Sonoran green toad (*B. retiformis*), canyon treefrog (*Hyla arenicolor*), mud turtle (*Kinosternon arizonense*), Sonoran mud turtle (*K. sonoriense*), Tucson banded gecko (*Coleonyx bogerti*), zebra-tailed lizard (*Callisaurus draconoides*), southwestern greater earless lizard (*Cophosaurus texanus*), Sonoran collared lizard (*Crotaphytus nebrius*), leopard lizard (*Gambelia wislizenii*), regal horned lizard (*Phrynosoma solare*), Clark's spiny lizard (*Sceloporus clarki*), desert spiny lizard (*S. magister*), common tree lizard (*Urosaurus ornatus*), Arizona alligator lizard (*Gerrhonotus kingi*), Gila monster (*Heloderma suspectum*), giant spotted whiptail (*Cnemidophorus burti*), Sonoran spotted whiptail (*C. sonorae*), western whiptail (*C. tigris*), desert-grassland whiptail (*C. uniparens*), glossy snake (*Arizona elegans noctivaga*), western hook-nosed snake (*Gyalopion canum*), night snake (*Hypsiglena torquata*), common kingsnake (*Lampropeltis getulus*), Sonora mountain kingsnake (*L. pyromelana*), Sonora whipsnake (*Masticophis bilineatus*), coachwhip (*M.*

flagellum), long-nosed snake (*Rhinocheilus lecontei*), Big Bend patch-nosed snake (*Salvadora deserticola*), ground snake (*Sonora semiannulata*), Mexican black-headed snake (*Tantilla antriceps*), Mexican garter snake (*Thamnophis eques*), checkered garter snake (*T. marci*), Lyre snake (*Trimorphodon biscutatus*), Arizona coral snake (*Micruroides euryxanthus*), western diamondback rattlesnake (*Crotalus atrox*), banded rock rattlesnake (*C. lepidus*), and the black-tailed rattlesnake (*C. molossus*) (Bebler and King, 1979).

Common mammals found in the general project area include the white-tailed deer (*Odocoileus virginianus coussii*), coyote (*Canis latrans*), javelina (*Dicotyles tajacu*), ringtail (*Bassariscus astutus*), coati (*Nasua nasua*), striped skunk (*Mephitis mephitis*), hooded skunk (*M. macroura*), jaguar (*Felis onca*), mountain lion (*F. concolor*), bobcat (*F. rufus*), pronghorn (*Antilocapra americana*), desert shrew (*Notiosorex crawfordi*), long-tongued bat (*Choeronycteris mexicana*), Yuma myotis (*Myotis yumanensis*), cave myotis (*M. velifer*), California myotis (*M. californicus*), western pipistrelle (*Pipistrellus hesperus*), Southern yellow bat (*Lasiurus ega*), spotted bat (*Euderma maculatum*), pallid bat (*Antrozous pallidus*), Brazilian free-tailed bat (*Tadarida brasiliensis*), desert cottontail (*Sylvilagus audubonii*), eastern cottontail (*S. floridanus*), black-tailed jack rabbit (*Lepus californicus*), white-sided jackrabbit (*L. callotis*), spotted ground squirrel (*Spermophilus spilosoma*), rock squirrel (*S. variegatus*), Arizona gray squirrel (*Sciurus arizonensis*), southern pocket gopher (*Thomomys umbrinus*), Botta's pocket gopher (*T. bottae*), Bailey's pocket mouse (*Perognathus baileyi*), desert pocket mouse (*P. penicillatus*), banner-tailed kangaroo rat (*Dipodomys spectabilis*), Merriam's kangaroo rat (*D. merriami*), western harvest mouse (*Reithrodontomys megalotis*), cactus mouse (*Peromyscus eremicus*), brush mouse (*P. boylii*), southern grasshopper mouse (*Onychomys torridus*), and the white-throated woodrat (*Neotoma albigula*) (Whitaker, 1980).

Common birds species in the general project area include the turkey vulture (*Caithartes aura*), red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), red-winged blackbird (*Agelaius phoeniceus*), mourning dove (*Zenaida macroura*), white-winged dove (*Z. asiatica*), Inca dove (*Columbina inca*), common ground dove (*C. passerina*), scaled quail (*Callipepla squamata*), Gambel's quail (*C. gambelii*), Harris' Hawk (*Parabuteo unicinctus*), crested caracara (*Caracara plancus*), greater roadrunner (*Geococcyx californianus*), ferruginous pygmy-owl (*Glaucidium brasilianum*), common poorwill (*Phalaenoptilus nuttallii*), ash-throated flycatcher (*Myiarchus cinerascens*), brown-crested flycatcher (*M. tyrannulus*), verdin (*Auriparus flaviceps*), cactus wren (*Campylorhynchus brunneicapillus*), rock wren (*Salpinctes obsoletus*), canyon wren (*Catherpes mexicanus*), curve-billed thrasher (*Toxostoma curvirostre*), pyrrhuloxia (*Cardinalis sinuatus*), varied bunting (*Passerina versicolor*), Botteri's sparrow (*Aimophila botterii*), Cassin's sparrow (*A. cassinii*), black-throated sparrow (*Amphispiza bilineata*), and the bronzed cowbird (*Molothrus aeneus*) (Bull and Farrand, 1996).

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### **3.5.3 Aquatic Species**

Aquatic habitat is limited to small drainages or wash depressions located within the proposed project area as described in Section 3.4.2. No permanent surface water resources capable of supporting fish species were present at the proposed project location. No permanent surface water resources were located within the potentially impacted area. Therefore, no amphibians or fish were observed during the November 1999 site visit.

### **3.5.4 Threatened and Endangered Species**

Many Federally- and State-listed threatened and endangered species of plants, fish, and wildlife could occur in Cochise County. A list of these species as provided by the ANHP and the USFWS can be found in Table 3-1. No evidence of the Federally- or State-listed species threatened or endangered species were observed during the November site visit. Additional information on these species can be found in Appendix C.

Several Federally-listed fauna species were reported as having the potential to occur in Cochise County. The following information briefly describes the preferred habitat of these species:

The Jaguar in Arizona ranges widely throughout a variety of habitats from the Sonoran Desert to the conifer forests. The cat prefers brush, forested areas, swamps, and arid mountainous scrub. The most recent records of a jaguar in the U.S. are from the New Mexico/Arizona border area and in south-central Arizona, both in 1996. Unconfirmed sightings and tracks continue to be reported.

The Jaguarundi can be found in semi-arid thorny forests, deciduous forests, humid pre-montaine forests, upland dry savannahs, swampy grasslands, riparian areas, and dense brush. Unconfirmed reports of individuals in the southern portion of the State continue to be received. No specimens have been collected in Arizona.

The Mexican Gray Wolf prefers a chaparral, woodland, or forested habitat, but has been known to cross desert areas. Unconfirmed reports of individuals in the southern part of the State continue to be received; however, the majority of the individuals are believed to reside in Mexico.

The Ocelot prefers a habitat of humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub. Unconfirmed reports of individuals in the southern part of the State of have been received.

Table 3-1 List of Threatened, Endangered, or Species of Concern

COMMON NAME	SCIENTIFIC NAME	ESA	Critical Habitat	USFWS	WSCA	NPL	NESL
Jaguar	<i>Panthera Onca</i>	LE					
Jaguarundi	<i>Felis yagouaroundi tolteca</i>	LE					
Mexican Gray Wolf	<i>Canis lupis baileyi</i>	LE					
Ocelot	<i>Felis pardalis</i>	LE					
Chiricahua Leopard Frog	<i>Rana chiricahuensis</i>	C		S	WC		
Lowland Leopard Frog	<i>R. Yavapaiensis</i>	SC		S	WC		
Baird's Sparrow	<i>Ammodramus bairdii</i>	SC		S	WC		
Ferruginous Hawk	<i>Buteo regalis</i>	C		S			Y
Northern Aplomado Falcon	<i>F. femoralis septentrionalis</i>	LE					
Bald Eagle	<i>Haliaeetus leucocephalus</i>	LT					
Whooping Crane	<i>Grus Americana</i>	LE		S	WC		
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	LE					
California Condor	<i>Gymnops californianus</i>	LE		S			
Loggerhead Shrike	<i>Lanius ludovicianus</i>	C					
Mountain Plover	<i>Charadrius montanus</i>	C		S	WC		
Southwestern Willow Flycatcher	<i>Empidonax trailliiextimus</i>	LE					
Yaqui Chub	<i>Gila purpurea</i>	LE			WC		
Beautiful Shiner	<i>Cyprinella formosa</i>	LT		S	WC		
Yaqui Topminnow	<i>Poeciliopsis occidentalis sonoriensis</i>	LE		S	WC		
Yaqui Catfish	<i>Ictalurus pricei</i>	LT					
Lesser Long-Nosed Bat	<i>Leptonycteris curasoae yerbabuenae</i>	LE		S	WC		
California Leaf-Nosed Bat	<i>Macrotus californicus</i>	C					
Mexican Long-Tongued Bat	<i>Choeronycteris mexicana</i>	C					
Southwestern Cave Bat	<i>Myotis velifer brevis</i>	C					

COMMON NAME	SCIENTIFIC NAME	ESA	Critical Habitat	USFWS	WSCA	NPL	NESL
Arizona Shrew	<i>Sorex arizonae</i>	SE		S	WC		
Chiricahua Western Harvest Mouse	<i>Reithrodontomys megalotis arizonensis</i>	C					
Huachuca Golden-Aster	<i>Heterotheca rutteri</i>						
Needle-Spined Pineapple Cactus	<i>Coryphantha Robbinsorum</i>	LT		S		HS	
Bartram's Stonecrop	<i>Graptopetalum bartrami</i>	C					
Huachuca Water Umbel	<i>Lilaeopsis scaffneriana var recurva</i>	LE		S		HS	
Canelo Hills Ladies'-Tresses	<i>Spiranthes delitescens</i>	LE		S		HS	
Sonoran Desert Tortoise	<i>Gopherus agassizii</i>	SC		S	WC		
Canyon Spotted Whiptail Lizard	<i>Cnemidophorus burti</i>						
Massasauga	<i>Sistrurus catenatus</i>	LT		S	WC		
Texas Horne Lizard	<i>Phrynosoma cornutum</i>	C					
Sonoran Tiger Salamander	<i>Ambystoma tigrinum stebbinsi</i>	LE		S			
Mexican Garter Snake	<i>Thamnophis eques megalops</i>	SC		S	WC		

C	Species of Concern
ESA	Endangered Species Act (1973 as amended).
LE	Listed Endangered: imminent jeopardy of extinction
LT	Listed Threatened
NESL	Navajo Endangered Species List (1997).
NPL	Arizona Native Plant Law, Arizona Department of Agriculture. HS – Highly safeguarded, no collection allowed. SR – Salvage restricted, collection only with permit.
S	Sensitive: those taxa occurring on National Forests in Arizona that are considered sensitive by the Regional Forester.
SC	Species of Concern. The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the USFWS, but neither term has official status.
USFWS	U.S. Fish and Wildlife Service
WSCA/WC	Wildlife of Species Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona October 1996 Draft.
Critical Habitat	Y critical habitat has been designated.

The Sonoran Tiger Salamander's habitat varies from arid sagebrush plains to mountain forests, where the ground is easily burrowed. They are seen mostly at night following heavy rains and they live beneath debris near water or in mammal burrows. Known habitat for this species occurs in stock tanks and impounded cienegas in San Rafael Valley, and the Huachuca Mountains.

The Bald Eagle prefers large trees or cliffs near water with abundant prey, which are not present in the proposed project area. Although this species has recently been proposed for delisting, a final decision is not expected until July 2000.

The Mexican Spotted Owl nests in older forests of mixed conifer or ponderosa pine-gambel oak type, in canyons. Sites with cool microclimates appear to be of importance or are preferred.

The Northern Aplomado Falcon formerly nested in the southwestern U.S. and occurs only as an accidental. Good habitat for this species contains low ground cover and mesquite or yucca for nesting platforms. There have been no recent confirmed reports of this species in Arizona.

Although recently delisted (August 25, 1999), the American Peregrine Falcon was listed as occurring in Cochise County. This falcon prefers open country, especially along rivers, also near lakes and along coasts and in cities. The Whooping Crane prefers freshwater bogs and winters on coastal prairies.

The Southwestern Willow Flycatcher prefers cottonwood/willows and tamarisk vegetation communities along rivers and streams. Critical habitat for this species exists on portions of the 100-year floodplain on the San Pedro and Verde Rivers, Wet Beaver and West Clear Creeks, including Tavaschi Marsh and Ister Flat, the Colorado River, the Little Colorado River, and the west, east and south forks of the Little Colorado River.

The Yaqui Topminnow is found in small streams, springs, and cienegas vegetated shallows and has historically existed in the Santa Cruz River near Tucson.

The Yaqui Chub is found in perennial and intermittent small to moderate streams with boulders and cliffs.

The Lesser Long-Nosed Bat prefers the habitat offered by caves and mines where the mountains rise from the desert. This species day roosts in caves and abandoned tunnels and forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti.

Likewise, there are three Federally-listed plant species for Cochise County. The Needle-Spined pineapple cactus prefers is found in semi-desert grassland communities. The Huachuca water umbel is typically located in cienegas, perennial low gradient streams or wetlands. This species can also be found adjacent to Sonora, Mexico. The Canelo Hills ladies-tresses are found in finely grained, highly organic, saturated soils of cienegas. Potential habitat for this species may

occur in Sonora, Mexico, but no populations have been found. Although the potential exists for finding suitable habitat for the Federally-listed plant species within some portion of the project area, these three particular species are not likely to exist in the previously disturbed areas in which construction would take place.

There are 17 Federally-listed species of concern for Cochise County. Most of these species, with the exception of the mountain plover, prefer floodplain terraces, pools, springs or streams, rivers or stock tanks. No permanent surface water resources exist within or adjacent to the proposed project location. The mountain plover typically prefers a sandy soil habitat and has historically been sighted in this area as a migratory species.

### 3.6 NOISE

The proposed project area is located away from noise sensitive sites such as schools, churches, hospitals, etc. The ambient noise environment within the general area is typical of rural areas with projected noise levels ranging from about 35 to 55 average-weighted decibels (dBA) day/night noise level (Ldn). These levels may be substantially higher when the wind blows (U.S. Army 1995). Current noise in this area is generated by USBP vehicles patrolling the border and vehicles passing through the POE.

### 3.7 CULTURAL RESOURCES

Historic and archaeological resources are nonrenewable resources whose values may be easily diminished by physical disturbances. These resources are those items, places, or events considered important to a culture or community for reasons of history, tradition, religion, or science.

Although a cultural resources survey was not specifically conducted for this assessment, the entire area has been previously surveyed during past projects. In 1998, Aztlan Archaeology conducted a cultural resources survey for a project area located one mile east of the POE and one mile west of the POE (Aztlan 1998). Prior to conducting the fieldwork for the 1998 survey, previous survey and site records at the Arizona State Museum (ASM) were reviewed for pertinent information, along with National Register of Historic Places listings, and AAI in-house records. Historic General Land Office (GLO) maps were also obtained from the Bureau of Land Management (BLM) Public Room in Phoenix, Arizona. This information indicated that two prior archaeological surveys have been conducted within a mile of the proposed project area. A third survey was conducted in 1991, however, no information was available in the survey files at the ASM, although the sites found during the recent field survey were recorded at the ASM.

#### ASM Survey No. 1976-005

On September 20, 1976, the Cultural Resources Management Section of the ASM conducted a 10-acre survey for the Naco Sewer Commission in portions of Section 18. No sites were recorded by this project.

**ASM Survey No. 1978-010**

John S. Collins & Associates contracted the Cultural Resources Management Section of the ASM to survey 313 acres and a 2.6 mile-long right-of-way in parts of Sections 11, 12, 13, and 14, and the N ½ S ½ of Section 18. The fieldwork took place on March 20-22, 1978. Although one site was recorded during the survey, it is not located within a mile of the current project area.

**Unrecorded Survey**

Geo-Marine, Inc., performed surveying and monitoring of the Douglas-Naco Arizona sector of the international border for the USACE between August and November, 1991. The survey consisted of a 48.5 mile-long ROW along the international border. Six of the 41 sites recorded or evaluated by Geo-Marine are located within a mile of the current project area.

The four historic GLO maps, dated May 1899, May 1901, April 1909, and June 1917, did not provide any relevant historical information. The ASM site files indicated that 10 archaeological sites have been previously recorded in or within a 1-mile radius of the proposed project area. One of the sites is also listed on the National Register of Historic Places.

Additionally, two cultural resources in the Naco area are currently listed on the National Register of Historic Places. (NRHP), one prehistoric and one historic. The prehistoric resource is the Naco-Mammoth Kill Site and the historic resource is the Naco Border Station also known as the Naco Customs House located at the Naco POE.

**3.8 AESTHETIC RESOURCES**

Aesthetic resources consist of the natural and manmade landscape features that appear indigenous to the area and give a particular environment its visual characteristics. The current visual characteristics of the general project area are mostly of open space and low rolling hills covered by native grasses and vegetation. A trailer park is located on the west side of the POE, and isolated dwellings are located on the Mexican side in this direction. Cattle pens with adjacent grazing areas, with a few isolated dwellings were located on the east side of the POE. Most of the aesthetic resources in the general area have been degraded due to existing development, border fencing, and large amounts of trash and debris scattered along both sides of the border. Background vistas outside of the city consist of distant views of the surrounding mountains.

**3.9 SOLID AND HAZARDOUS WASTE**

According to Naco USBP representatives, there is no known or suspected toxic and/or hazardous material contamination within the proposed project area. Additionally, there are no known historic land uses within the project area (such as industrial uses) that might have resulted in

toxic or hazardous material contamination of the underlying soil and/or groundwater resources. However, due to the evidence of illegal and uncontrolled dumping of trash in immediate vicinity, it is possible that potentially hazardous wastes may have been dumped.

### 3.10 SOCIOECONOMIC DATA

According to the Arizona Department of Economic Security and the U.S. Census Bureau, the 1996 statistics indicated the population of Cochise County, Arizona was 110,062. Making up this number, approximately 79,724 persons were listed as white; 5,078 as black; 790 as American Indian, Eskimo, or Aleut; 2,247 as Asian or Pacific Islander; and the remaining persons were listed as other races.

The 1992 Economic Census for Cochise County lists approximately 5,173 firms in Cochise County. Of these firms, approximately 1,008 are listed as minority-owned firms and 1,991 are listed as women-owned firms.

In 1994, the civilian labor force for Cochise County totaled 41,770, and the county unemployment rate was 9.8 percent. Within the county, the leading employment sectors include agriculture, cattle, manufacturing, retail trade, government, and services. Approximately 48 percent of the total land in Cochise County is dedicated to farming (U.S. Census Bureau, 1996). The estimated annual median household income for Cochise County is listed as ranging from \$24,181 to \$28,500.

The town of Naco, Arizona is located on the International Border separating the U.S. and Mexico. Approximately 700 people reside in the City of Naco and most of the population of Naco is engaged in agriculture, cattle, or small retail businesses. Trade has been developed between Naco, Arizona and Naco, Sonora, Mexico and includes such commodities as copper, firewood, charcoal, turquoise, and electric goods (U.S. Army 1994). With regard to socioeconomics, both cities benefit from sharing occupational/economic activities.

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#### 4.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

Based on discussions with USBP personnel, Federal and State agencies, and local authorities, as well as comparisons with similar USBP activities, several environmental factors potentially associated with the Proposed Action have been identified. An environmental consequence or impact is defined as a modification in the existing environment brought about by mission and support activities. Impacts can be beneficial or adverse, a primary result of an action (direct) or a secondary result (indirect), and can be permanent or long-lasting (long-term) or of short duration (short-term). Impacts can vary in degree from a slightly noticeable change to a total change in the environment.

Short-term impacts would occur along the border during and immediately after the construction of the proposed project. For this project, short-term impacts are defined as those tied to the first two years following project implementation, whereas long-term impacts are those lasting more than two years.

Impact significance criteria are presented for each affected resource. These criteria are based on existing regulatory standards, scientific and environmental knowledge, and/or best professional judgment. Potential impacts for this project were classified at one of three levels: significant, insignificant (or negligible), and no impact. Significant impacts (as defined in CEQ guidelines 40 CFR 1500-1508) are effects that are most substantial, and therefore should receive the greatest attention in decision-making process. Insignificant impacts would be those impacts that result in changes to the existing environment that could not be easily detected. No-impact actions would not alter the existing environment. In the following discussions, impacts are considered adverse unless identified as beneficial.

Potential environmental consequences to each resource section include the following subcategories:

- **Impacts.** The level and duration of impacts that would occur as a result of the Proposed Action and the No-Action Alternative.
- **Mitigation.** Mitigation measures that could be applied to avoid or further reduce adverse impacts. Mitigation is discussed in Chapter 5.0.

Cumulative impacts and irreversible and irretrievable commitment of resources are discussed in separate sections following the discussions of each specific resource. Cumulative impacts are those that result from the incremental impacts of an action added to other past, present, and reasonably foreseeable actions, regardless of who is responsible for such actions. Irreversible and irretrievable impacts are permanent reductions or losses of resources that, once lost, cannot be regained.

This section of the EA will discuss only those environmental factors that would be impacted by the Proposed Action or the No-Action Alternative. Table 4-1 presents a comparison of the potential impacts by each area of concern.

**Table 4-1 Comparison of Potential Impacts**

Area of Impact		Proposed Action	No Action
Air Resources	ST:	Insignificant	No Impact
	LT:	No Impact	No Impact
Land Use	ST:	No Impact	No Impact
	LT:	No Impact	No Impact
Geological Resources	ST:	Insignificant	No Impact
	LT:	No Impact	No Impact
Water Resources	ST:	Insignificant	No Impact
	LT:	No Impact	No Impact
Cultural Resources	ST:	Insignificant	No Impact
	LT:	No Impact	No Impact
Biological Resources	ST:	Insignificant	Insignificant
	LT:	No Impact	Insignificant
Noise	ST:	Insignificant	No Impact
	LT:	No Impact	No Impact
Aesthetic Resources	ST:	Insignificant	No Impact
	LT:	No Impact	No Impact
Solid/Hazardous Waste	ST:	No Impact	No Impact
	LT:	No Impact	No Impact
Socioeconomic	ST:	Beneficial	Insignificant
	LT:	Beneficial	Insignificant

ST = Short-term Impact.

LT = Long-term Impact.

Beneficial = Impact would be favorable, producing an overall benefit.

Insignificant = Perceptible, but not significant impacts.

Significant = Potential impact which requires concern.

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## **4.1 AIR RESOURCES**

### **4.1.1 Proposed Action**

Under the Proposed Action, exhaust pollutants would be created from on-site heavy equipment used for fence construction/road improvements and vehicles bringing workers and building materials to the sites. It is assumed that several pieces of heavy equipment could be used simultaneously during the construction phase. These pieces are typically moved on-site and remain for the duration of construction.

Increases in pollutant levels or impacts on ambient air quality during the construction phase would be expected to be short-term and insignificant, and can be reduced further through the use of standard dust control techniques, including roadway watering and use of chemical dust suppressants. Although some fugitive dust will be associated with road use, it would not be significantly greater than amounts currently produced. The emissions generated by vehicles using the road and bridges would be negligible and below state levels of significance, and no longer-term impacts would be expected to occur.

The Proposed Action would not require any permitting action and would not create any air emissions that would jeopardize the Federal attainment status of the Air Quality Region, or cause an exceedance in the allowable Prevention of Significant Deterioration (PSD) increment for the region. Additionally, any emissions created by construction activities from the Proposed Action would be within conformance of the SIP.

### **4.1.2 No-Action Alternative**

Under the No-Action Alternative, baseline conditions would not change; therefore, no impact is expected from this alternative.

## **4.2 LAND USE**

### **4.2.1 Proposed Action**

No impacts on land use would be expected from project-related activities. All of the areas in which fence construction or road improvement would occur would continue to be used in the same manner as they are at present (barriers or roads). The only change would be in the enhanced functionality of each of the affected components. Under the Proposed Action, the overall land use of the project areas adjacent to each component would not change.

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#### **4.2.2 No-Action Alternative**

Under the No-Action Alternative, baseline conditions would not change. The areas would continue to be used for the illegal entry of drugs, people, vehicles, and associated criminal and violent activity.

### **4.3 GEOLOGICAL RESOURCES**

#### **4.3.1 Proposed Action**

It is not likely that geologic hazards such as seismic events, landslides, subsidence, or increased flooding would result from any elements of the Proposed Action. None of these elements would require excavations, pumping of groundwater, or removal of vegetative cover. The improved vehicle barrier would most likely reduce the number of vehicles attempting to cross the border at locations other than the POE, thus reducing erosion due to vehicles. Similarly, improvements to the existing access road and construction of Arizona crossings in the ephemeral stream crossings west of the POE would most likely reduce erosion resulting from USBP vehicles.

#### **4.3.2 No-Action Alternative**

No impacts to topography or physiography would be expected from the No-Action Alternative.

### **4.4 WATER RESOURCES**

#### **4.4.1 Proposed Action**

The surficial aquifer is recharged by precipitation at the proposed project site and the surrounding areas. The Proposed Action would not be expected to significantly increase the amount of paved areas within the general area; therefore, no impact to the surficial aquifer recharge area would be expected. No water usage would be expected for the operation of the Proposed Action, and only minimal water usage would be expected during the construction phase of the proposed project.

The proposed project area is located more than five miles east of the San Pedro Watershed area and no impact to this area is expected from implementation of the Proposed Action. No deterioration of natural drainages, disruption of drainage patterns, or degradation of existing surface water quality is expected from project implementation. The two Arizona crossings to be constructed in the ephemeral stream crossings west of the POE would not likely impact flow in the stream channels, as they would be constructed to allow water to flow over them.

Navigable waters of the U.S. are defined as those waters that are subject to the ebb and flow of the tide and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. As there are no waters of the U.S. located within the

project area; thus, a Section 404 permit for dredging or filling would not be required as a result of the Proposed Action.

#### **4.4.2 No-Action Alternative**

No change in baseline conditions would be expected from the No-Action Alternative.

### **4.5 BIOLOGICAL RESOURCES**

#### **4.5.1 Proposed Action**

A biologist from EComm and a representative from the Joint Task Force Six Organization were accompanied by a Naco District USBP Agent to the proposed project area on December 2, 1999. A field survey of all areas of proposed construction was conducted; this area was typically a corridor approximately 20 m wide. This survey was conducted in an effort to survey and inventory biological resources at the proposed project area and evaluate the potential effects of the Proposed Action on these resources. Prior to the site reconnaissance survey, all available project-related literature was reviewed and information from the Arizona Natural Heritage Program (ANHP) and the USFWS was obtained regarding Federally and State-listed threatened and endangered species or special species of concern. Wildlife species noted during the November site visit included a domestic dog (*Canidae*), several species of dove, sparrows and ravens, and domestic cattle. No other species were noted at that time.

##### **4.5.2.1 Vegetation**

As previously noted, a 20 m (66 foot) wide corridor was surveyed for the proposed project area (four miles east of the POE and six miles west of the POE). Minimal vegetation was noted along the existing fence or vehicle barriers located at the international border. Extension of the land mat fence and installation of the new vehicle barriers will disturb only the minimal amount of vegetation just along the border. No additional vegetation north of the border roadway will be disturbed during these activities.

The existing border road is approximately 20 to 30 feet wide. No vegetation was noted within the roadway and minimal vegetation was north of the existing roadway as noted in the site photographs contained in Appendix A. Due to the fact that these areas were previously disturbed and that they are of adequate width, proposed improvement and maintenance activities are not expected to impact any new undisturbed areas.

Insignificant impacts to native plant species protected by the Arizona Native Plant Law may occur during the proposed project construction activities. A list of these plants is contained in Appendix C. However, no native plant species were observed in any of the areas of direct impacts. Coordination with the Arizona Department of Agriculture has been conducted to

facilitate relocation of protected specimens, where necessary, with implementation of the Proposed Action.

Due to the high degree of previous disturbance of the proposed project sites and the regional abundance of the Arizona native plant species, the impact of the Proposed Action would be insignificant. Additionally, roads to be used for access to the project areas support minimal vegetation; therefore, impacts to these areas are expected to be insignificant.

#### 4.5.2.2 Wetlands and Floodplains

There are no wetlands or floodplains located on the Proposed Action site or within the immediately surrounding area of the project site. These resources would not be impacted by the Proposed Action.

#### 4.5.2.3 Fish and Wildlife

The Proposed Action would have no impact on fish species because the proposed construction activities would not take place in or near flowing or standing water. The only wildlife species that could be impacted from the Proposed Action would be small mammal, reptile, and bird species. These impacts to such resources, such as foraging grass habitat and ground nesting habitat, would be insignificant due to the low amount of actual area disturbed by the Proposed Action. No long-term impacts to either small mammal, reptile, and bird populations would be expected. Larger terrestrial wildlife movements in the proposed construction areas should not be affected due to the short duration of time required for the proposed construction. Additionally, construction activities would be conducted only during daylight hours. No construction activities would be conducted during the early morning hours or nighttime hours when wildlife species are most active. Therefore, impacts on wildlife species are expected to be short-term and minimal.

#### 4.5.2.4 Threatened and Endangered Species

Under the Endangered Species Act, formal consultation with the USFWS is required for any action that may affect Federally-listed species. Additionally, Federal agencies are required to ensure that any action authorized, funded, or carried out by such agencies would not be likely to jeopardize the continued existence of any threatened or endangered species. A copy of the consultation letters with the USFWS and Arizona Fish and Game Department is presented in Appendix D.

During the December 1999 survey of the project area, there were no protected species or evidence of their potential habitat observed. Based on the information provided in Section 3.5.4 for both flora and fauna species, their preferred habitats, and lack of evidence that these species occur within the project area, it would be unlikely that any Federally-listed threatened or endangered species would be found within the proposed project area, except on a transient basis.

Therefore, the Proposed Action would have no effect on Federally-listed threatened and endangered species.

#### **4.5.2 No-Action Alternative**

Baseline conditions would not change under the No-Action Alternative; therefore, no impacts would be expected on biological resources.

### **4.6 NOISE**

#### **4.6.2 Proposed Action**

Noise naturally dissipates by atmospheric attenuation as it travels through the air. Some other factors that can effect the amount of attenuation are ground surface, foliage, topography, and humidity. For each doubling of distance from the source, the noise level can be expected to decrease by approximately 6 decibels (dB). This method is a very conservative estimate of noise levels. A significant impact would be an increase in the ambient noise levels to a level of physical discomfort, or 120 A-weighted decibels (dBA).

Temporary construction noise impacts vary markedly because the noise intensity of construction equipment ranges widely as a function of the equipment and its level of activity. Short-term construction noise impacts tend to occur in discrete phases dominated initially by large earthmoving sources and later by hand-operated tools for finish construction. The noise produced by an assemblage of heavy equipment involved in urban, commercial, and industrial development typically ranges up to about 89 dBA at 50 feet from the source (U.S. Army 1995).

Over most of the proposed project area, receptors are located well beyond these distances. Only insignificant noise impacts are expected from the construction phase of the proposed project and no noise impacts are expected during the operation phase of the project. Additionally, given the heavy traffic noise resulting from the urban road and highway system in and around Naco, Arizona, the noise expected from the proposed construction activities would be short in duration (less than 30 to 60 days), and would be expected to be insignificant to existing noise levels.

#### **4.6.2 No-Action Alternative**

No change in baseline conditions would be expected under the No-Action Alternative.

### **4.7 CULTURAL RESOURCES**

#### **4.7.1 Proposed Action**

As previously indicated, two sites were found within a one-mile radius of the existing landing mat fence project area to be eligible for the NRHP. These sites are AZ FF:9:13 and AZ FF:9:23,

both located east of the POE. Site AZ FF:9:13 is a historic artifact scatter and rock alignment located north of the existing landing mat fence area. The site may possibly include a corral. Site AZ FF:9:23 is the Old Naco Dump, first established in 1900 and continues to be used today to some extent. Field examination of this site in 1998 revealed that the historic scatter has some depth, but did not appear to be substantial (Aztlan 1998). However, proposed activities for the landing mat extension, the new vehicle barriers, construction of the Arizona crossings, and improvements to the border road will not impact either of these sites.

#### **4.7.2 No-Action Alternative**

No change in baseline conditions would be expected under the No-Action Alternative.

### **4.8 SOLID AND HAZARDOUS WASTES**

#### **4.8.1 Proposed Action**

An accidental release or spill could occur as a result of fuels, oils, lubricants, and other hazardous or regulated materials brought on site for the proposed construction activities. A spill could result in potentially adverse impacts to on-site soils, and threaten the health of the local population, as well as wildlife and vegetation. However, the amounts of fuel and other lubricants and oils would be limited, and the equipment would be located on site to quickly limit any contamination. A spill prevention and response plan would be developed and implemented as part of the Proposed Action.

Because of the random nature of illegal dumping along the border areas, it is difficult to determine the location and quantity of hazardous waste that may be present within the general project area. If hazardous materials or wastes are present, there would be a potential for exposure during construction activities. Construction personnel would be informed about the potential to encounter hazardous wastes that may be present on the site from dumping and the appropriate procedures to use if suspected hazardous contamination is encountered. Under the Proposed Action, it is assumed that worker-safety risks will be reduced through the implementation of standard safe practices, such as wearing hard hats, steel-toed boots, gloves, ear protection, face masks, safety vests, and other equipment, where appropriate and/or prescribed by State and/or Federal worker health and safety laws and regulations.

During construction activities, fuels, oils, lubricants, and other hazardous materials will be used. A Spill Response Prevention Plan will be in-place prior to construction, and all personnel will be briefed in the implementation and responsibilities of the plan.

#### **4.8.2 No-Action Alternative**

No change in baseline conditions would be expected under the No-Action Alternative.

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## **4.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**

### **4.9.1 Socioeconomics of Proposed Action**

The proposed project would provide possible direct and indirect economic benefits to area companies and employees as a result of construction activities, and through economic multiplier effects. The beneficial impacts on the socioeconomic resources in the Region of Influence (ROI) such as population, employment, income, and business sales would be insignificant. The construction would be performed by military personnel transferred in for this project, and it would not be likely that additional hiring would occur within the local area. Additionally, the proposed construction would not induce permanent in- or out-migration to the ROI. Therefore, overall area population would not be impacted.

Direct expenditures related to the project would have a minimal impact on employment, income, and sales within the ROI. Although most labor and some materials would be brought into the local area, some expenditures are expected to occur within the ROI. A short-term increase in local revenues for commercial establishments, trade centers, and retail sales will result from the purchase of supplies and equipment rental. Any potential impacts from the construction activities would easily be absorbed into the broader economy of the ROI.

The possible socioeconomic benefits resulting from the completed project would also be beneficial to the ROI. By decreasing drug trafficking and smuggling, the Proposed Action would contribute to the reduction of socioeconomic impacts and burdens that currently exist on local law enforcement and the medical community.

### **4.9.2 Environmental Justice of Proposed Action**

EO 12898 of 11 February 1994 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provided that each U.S. Federal agency shall identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its program, policies, and activities on minority and low income populations in the U.S. The proposed construction sites are located in areas with similar characteristics of the broader ROI. Although some housing is located near the proposed areas of construction, there would be no impact on the residents, as the project would merely result in improvements to border control features that already exist. As a result of the proposed project, it would be expected that drug trafficking and associated violent crime would be reduced. Due to this reduction, all local populations equally benefit from this type of action.

Additionally, implementation of the Proposed Action would not restrict the flow of legal visitation, trade, or immigration. Therefore, there would be no expected disproportionately high and adverse impacts on minority or low-income populations. Under the definition of EO 12898, there would be no adverse environmental justice impacts.

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#### **4.9.2 No-Action Alternative**

Under the No-Action Alternative, the region would continue to experience immeasurable impacts to law enforcement agencies, medical institutions, and other socioeconomic organizations in the community as a result of continued drug trafficking, smuggling, and associated crime. There would be no impact to environmental justice or the socioeconomic resources in the ROI resulting from the No-Action Alternative.

#### **4.10 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

Irreversible and irretrievable commitments of resources would include: a small amount of soil lost through wind and water erosion, a minor loss of small animal habitat due to fence construction, materials, energy and manpower expended during construction of the project, and a temporarily higher level of noise generated from the construction activities.

#### **4.11 CUMULATIVE IMPACTS**

The assessment of cumulative impacts is addressed in NEPA by its reference to interrelations of all components of the natural environment. The CEQ defined cumulative impact as the incremental impact of multiple present and future actions with individually minor but collectively significant effects. Cumulative impacts can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment (Bain *et al.* 1986).

In order to evaluate cumulative effects of the past and present JTF-6 actions, EA's from previous and current operations in the region, and the PEIS developed for all JTF-6 activities along the U.S.-Mexico border were evaluated. Based on the current land use of the area (USBP activities and livestock grazing), an analysis of each component of the affected environment was completed from the existing EA's in order to identify which actions would have cumulative impacts as a result of the past and proposed operations. This analysis revealed that land use, air quality, threatened and endangered species, and socioeconomic resources of past action areas would not be subjected to cumulative impacts due to the temporary nature of construction activities. Water and biological resources (i.e., vegetation and wildlife habitat) would be slightly affected cumulatively from past border construction actions. There are no known Federal or state projects planned for the proposed project area. A positive cumulative impact has been realized by the additional cultural resource baseline data that has been gathered during the production of the various environmental documents, such as this environmental assessment.

The primary cumulative effect of past activities and the Proposed Action is the permanent loss of vegetation and associated wildlife habitat. As identified in the PEIS, the overall loss of vegetation falls below the projected level for the five-year period, and accounts for less than 0.01 percent of the total land area along the entire U.S.-Mexico international border. Implementation of the Proposed Action may result in only an insignificant loss of vegetation and wildlife habitat

since none of the four proposed elements (fence and carrier construction, low water crossing construction, and road maintenance) requires construction on or development of previously undeveloped land.

If a FONSI is developed and implemented, the Proposed Action would not contribute meaningfully to an overall loss of soil. In the past, soil losses have been minimized through the implementation of erosion control measures including waterbars, gabions, reseeding, compaction, and slope control. Although the amount of soils saved is not quantifiable, JTF-6 operations have reduced existing erosion problems at numerous locations by implementing such measures.

Air emissions have been produced by vehicles, aircraft, and heavy equipment. However, these have not resulted in significant cumulative impacts due to the short duration of the activities, the dispersion capabilities of the region, and the remote locations of most of the operations. Construction and maintenance activities have had cumulative positive impacts on socioeconomic resources within the border areas and the Nation, through reductions in illegal drug smuggling activities. Future impacts are anticipated to occur at a level consistent with past activities and not result in significant adverse effects (U.S. Army 1994).

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## 5.0 ENVIRONMENTAL DESIGN MEASURES

This chapter describes environmental design measures that would be implemented as part of the Proposed Action to reduce or eliminate impacts from the proposed project. Due to the limited nature of the Proposed Action, construction impacts are expected to be slight; therefore, mitigation measures are only described for those resources with potential for impacts.

### 5.1 WATER RESOURCES

Standard construction procedures would be implemented to minimize the potential for erosion and sedimentation during construction. All work would cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and material. Additionally, mitigation measures, such as a Stormwater Pollution Prevention Plan, for stormwater runoff from construction activities has been included as Appendix F of this document as the total area of disturbance is greater than three acres.

### 5.2 AIR QUALITY

Mitigation measures would include dust suppression methods to minimize airborne particulate matter that would be created during construction activities. Additionally, all construction equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions. Standard construction practices would be used to control fugitive dust during the construction phases of the Proposed Action.

### 5.3 BIOLOGICAL RESOURCES

Impacts to existing vegetation during construction activities would be minimized through avoidance. Additional mitigation measures will include best management practices during construction to minimize or prevent erosion and soil loss.

### 5.4 NOISE

As required by Occupational Safety and Health Administration (OSHA), earplugs will be worn by employees working in environments with continuous noise levels of 8 hours per day above 90 dBA. Because of the increased noise sensitivity during quiet hours, time limits on on-site construction activities are warranted for grading and the use of heavy equipment.

During the construction phase, noise impacts are anticipated at local human receptors. On-site activities should be restricted to daylight hours on Monday through Saturday, except in emergency situations, and only maintenance to equipment permitted on Sundays. Additionally, all construction equipment should possess properly working mufflers and be kept in a proper state of tune to reduce backfires. Implementation of these measures will reduce the noise impact to an insignificant level.

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## 5.5 CULTURAL RESOURCES

In the unlikely event that sites are identified during construction of the project, all operations will be ceased immediately and the appropriate officials notified, including the Arizona State Historic Preservation Officer (AZ SHPO). Given the use of avoidance measures, the USACE has determined, in accordance with 36 CFR Part 800.5 (a) and (d), that the proposed Naco fence /barrier/low water crossing construction and road improvement project as planned will have no adverse effect on National Register listed or eligible properties. A letter of concurrence to the AZ SHPO can be found in Appendix D, Consultation Letters.

## 5.6 SOLID AND HAZARDOUS WASTES

With proper handling, storage, and/or disposal of hazardous and/or regulated materials there would be no significant adverse impacts to onsite workers and neighboring flora and fauna. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein.

The refueling of machinery would be completed following accepted guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any spill of five gallons or more would be contained immediately within an earthen dike, and the application an absorbent (e.g., granular, pillow, sock, etc) would be used to absorb and contain the spill. Any major spill of a hazardous or regulated substance would be reported immediately to JTF-6 environmental personnel who would notify appropriate Federal and State agencies.

Additionally, all personnel would be briefed as to the correct procedures for preventing and responding to a spill. A Spill Prevention Plan would be in place prior to the start of construction. Adoption and full implementation of the construction measures described above will reduce impacts from hazardous/regulated substances impacts to insignificant levels.

All waste oil and solvents would be recycled if practicable. All non-recyclable hazardous and regulated wastes would be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, State, and local regulations, including proper waste manifesting procedures.

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## 6.0 PUBLIC INVOLVEMENT

This chapter discusses consultation and coordination that occurred in the preparation of this document. This includes contacts made during development of the Proposed Action, elimination of alternatives, and writing of the EA. Formal and informal coordination has been conducted with the following agencies:

- U. S. Army Corps of Engineers (Fort Worth District),
- Joint Task Force Six (JTF-6),
- Immigration and Naturalization Service (INS; USBP),
- State Historic Preservation Office (SHPO),
- U.S. Fish and Wildlife Service (USFWS),
- Arizona Department of Agriculture (ADA), and
- International Boundary and Water Commission (IBWC).

The Draft EA was made available for public review. The Notice of Availability (NOA) is included in Appendix E.

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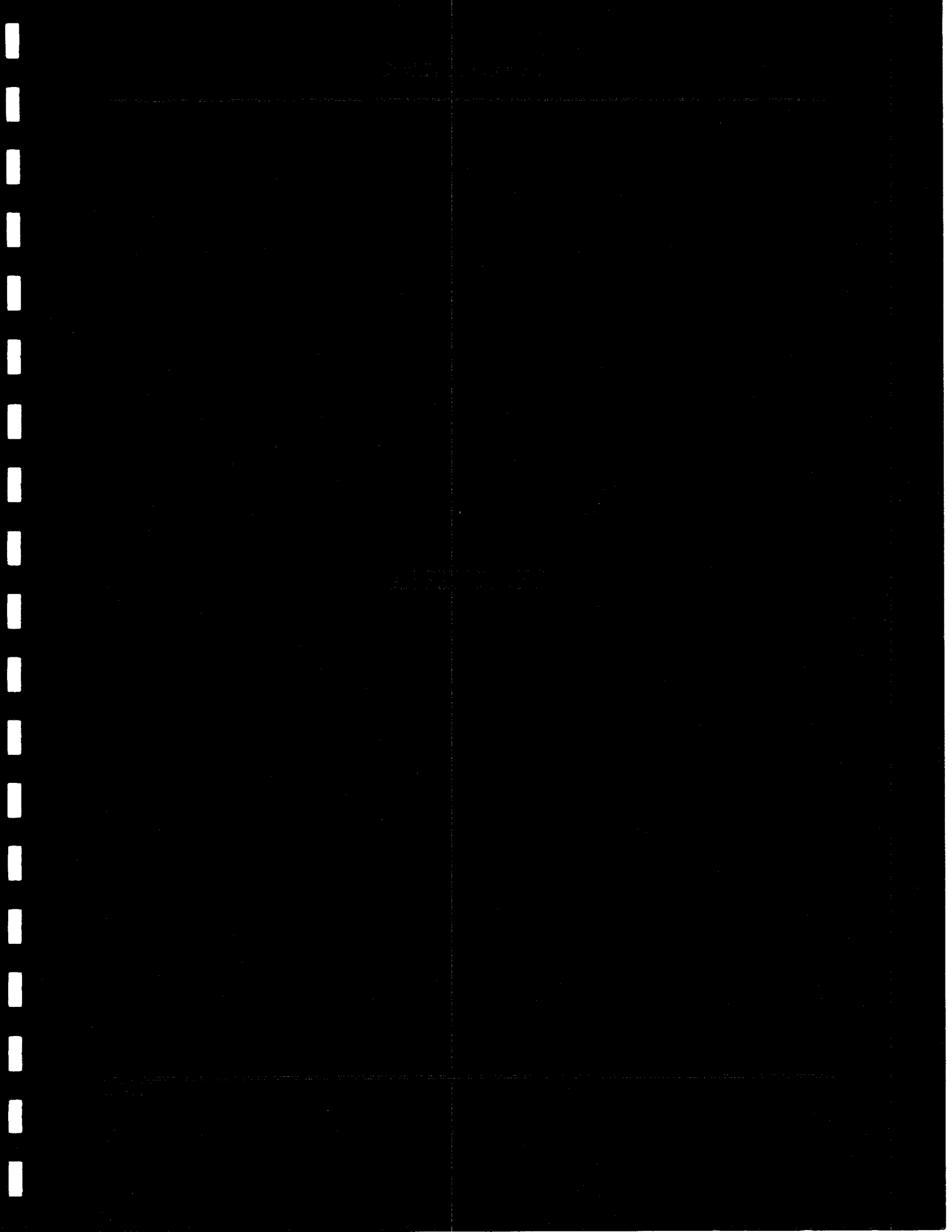
## 9.0 LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Arizona Department of Agriculture
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AGM	Arizona Groundwater Management
AMA	Active Management Area
ANHP	Arizona Natural Heritage Program
AR	Army Regulation
ARPA	Archaeological Resource Protection Act
ASM	Arizona State Museum
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dB	Decibel
dba	A-weighted decibels
DoD	Department of Defense
EA	Environmental Assessment
EComm	Ecological Communications Corporation
e.g.	for example
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
F	Fahrenheit
FCAA	Federal Clean Air Act
FIFRA	Federal Insecticides, Fungicide and Rodenticide Act
FONSI	Finding of No Significant Impact
FY	Fiscal Year
GPS	Global Positioning System
HC	Exhaust Hydrocarbons
HMTA	Hazardous Materials Transportation Act
IBWC	International Boundary and Water Commission
INS	Immigration and Naturalization Service
JTF-6	Joint Task Force Six
LEA	Law Enforcement Agencies
Ldn	Day/Night Noise Level
MET	Meteorological
METL	Mission Essential Training Elements
Mph	Miles Per Hour
NAAQS	National Ambient Air Quality Standards

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**LIST OF ACRONYMS AND ABBREVIATIONS (cont.)**

NDCS	National Drug Control Strategy
NEPA	National Environmental Policy Act
NESL	Navajo Endangered Species List
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO <sub>x</sub>	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPL	Native Plant Law
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PEIS	Programmatic Environmental Impact Statement
PL	Public Law
PM <sub>10</sub>	Particulates
POE	Port of Entry
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
ROW	Right of Way
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO <sub>x</sub>	Sulfur Oxides
SWPPP	Storm Water Pollution Prevention Plan
TSCA	Toxic Substances Control Act
U.S.	United States of America
USACE	United States Army Corps of Engineers
USBP	United States Border Patrol
USC	United States Code
USFWS	United States Fish and Wildlife Service
UTM	Universal Transverse Mercator
WSCA	Wildlife Species of Concern in Arizona



**APPENDIX A**  
**Site Photographs**



Figure A-1 Beginning of eastern section of proposed fence line. Note existing landing mat fence in foreground of photo. Photo taken facing east.



Figure A-2 Photo of existing vehicle barriers in eastern section. Photo taken facing east.



Figure A-3 End point of eastern section. Note border fence on left side of photo. Photo taken facing west.



Figure A-4 Beginning of western section of project. Note existing landing mat fence in left of photo. Photo taken facing west.



Figure A-5 Photo of western section of proposed project. Note existing vehicle barriers on left side of photo. Photo taken facing west.



Figure A-6 View of proposed location for Texas Bridge No. 1. Photo taken facing east.



Figure A-7 View of proposed location of Texas Bridge No. 2. Photo taken facing east.



Figure A-8 End of western section of proposed project. Photo taken from BLM gate, facing east.

## **APPENDIX B**

### **Federal and State Air Pollutant Standards**

## National Ambient Air Quality Standards\*

Air Pollutant	Type Average	National Standards*	
		of Primary <sup>(1)</sup> ( $\mu\text{g}/\text{m}^3$ )	Secondary <sup>(2)</sup> ( $\mu\text{g}/\text{m}^3$ )
Carbon Monoxide (CO)	1-hr	40,000	---
	8-hr	10,000	---
Inhalable Particulate Matter (PM <sub>10</sub> )	24-hr	150	---
	AAM <sup>(3)</sup>	50	---
Lead (Pb)	Calendar		
	Quarter	1.5	---
	3-months		
Nitrogen Dioxide (NO <sub>2</sub> )	AAM <sup>(3)</sup>	100	100
Ozone (O <sub>3</sub> )	1-hr	235	235
Sulfur Dioxide (SO <sub>2</sub> )	30-min	---	---
	3-hr	---	1,300
	24-hr	365	---
	AAM <sup>(3)</sup>	80	---
Total Suspended Particulate Matter (TSP)	1-hr	---	---
	3-hr	---	---
Hydrogen Sulfide (H <sub>2</sub> S)	30-min	---	---
Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	1-hr	---	---
	24-hr	---	---
Inorganic Fluoride Compounds (as HF)	3-hr	---	---
	12-hr	---	---
	24-hr	---	---
	7-day	---	---
	30-day	---	---
Beryllium	24-hr	---	---
Other Hazardous and Odorous Pollutants	30-min	---	---
	AAM <sup>(3)</sup>	---	---

<sup>1</sup> National Primary Standards establish the level of air quality necessary to protect the public health from any known or anticipated adverse effects of a pollutant, allowing a margin of safety to protect sensitive members of the population.

<sup>2</sup> National Secondary Standards establish the level of air quality necessary to protect the public welfare by preventing injury to agricultural crops and livestock, deterioration of materials and property, and adverse impact on the environment.

<sup>3</sup> Annual Arithmetic Mean.

<sup>4</sup> If it affects a residential area, business, or commercial property.

<sup>5</sup> If it affects only a property used for other than residential, recreational, business, or commercial purpose.

\* Adapted from 40 CFR 50.

## **APPENDIX C**

### **Threatened and Endangered Species Information**



## Southwest Region Species Lists

[Help](#)

## Cochise County, Arizona Species List

\* Click on a species common name to view the species details sheet.

Common Name	Scientific Name	Status
<a href="#">Canelo Hills ladies' tresses</a>	<i>Spiranthes delitescens</i>	Endangered
<a href="#">Gila topminnow</a>	<i>Poeciliopsis occidentalis</i>	Endangered
<a href="#">Yaqui catfish</a>	<i>Ictalurus pricei</i>	Threatened
<a href="#">Beautiful shiner</a>	<i>Cyprinella formosa</i>	Threatened
<a href="#">American peregrine falcon</a>	<i>Falco peregrinus anatum</i>	Endangered
<a href="#">Jaguar</a>	<i>Panthera onca</i>	Endangered
<a href="#">Huachuca water umbel</a>	<i>Lilaeopsis schaffneriana recurva</i>	Endangered
<a href="#">Bald eagle</a>	<i>Haliaeetus leucocephalus</i>	Threatened
<a href="#">Cochise pincushion cactus</a>	<i>Coryphantha robbinsorum</i>	Threatened
<a href="#">Yaqui chub</a>	<i>Gila purpurea</i>	Endangered
<a href="#">Northern aplomado falcon</a>	<i>Falco femoralis septentrionalis</i>	Endangered
<a href="#">Whooping crane</a>	<i>Grus americana</i>	Endangered
<a href="#">New Mexico ridge-nosed rattlesnake</a>	<i>Crotalus willardi obscurus</i>	Threatened
<a href="#">Jaguarundi</a>	<i>Felis yagouaroundi cacomitli</i>	Endangered
<a href="#">Mexican spotted owl</a>	<i>Strix occidentalis lucida</i>	Threatened
<a href="#">Sonora tiger salamander</a>	<i>Ambystoma tigrinum stebbinsi</i>	Endangered
<a href="#">Ocelot</a>	<i>Felis pardalis</i>	Endangered
<a href="#">Lesser long-nosed bat</a>	<i>Leptonycteris curasoae yerbabuenae</i>	Endangered
<a href="#">Mexican gray wolf</a>	<i>Canis lupus baileyi</i>	Endangered
<a href="#">Southwestern willow flycatcher</a>	<i>Empidonax traillii extimus</i>	Endangered

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

## 1) LISTED

TOTAL= 21

NAME: CANELO HILLS LADIES' TRESSES

*SPIRANTHES DELITESCENS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: SLENDER ERECT MEMBER OF THE ORCHID FAMILY (ORCHIDACEAE).

FLOWER: STALK 50 CM TALL, MAY CONTAIN 40 WHITE FLOWERS

SPIRALLY ARRANGED ON THE FLOWERING STALK.

ELEVATION

RANGE: about 5000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: FINELY GRAINED, HIGHLY ORGANIC, SATURATED SOILS OF CIENEGAS

POTENTIAL HABITAT OCCURS IN SONORA, MEXICO, BUT NO POPULATIONS HAVE BEEN FOUND.

NAME: COCHISE PINCUSHION CACTUS

*CORYPHANTHA ROBBINSORUM*

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 952, 1-9-1986

DESCRIPTION: A SMALL UNBRANCHED CACTUS WITH NO CENTRAL SPINES AND 11-17

WHITE RADIAL SPINES. THE BELL-SHAPED FLOWERS ARE BORNE ON

THE ENDS OF TUBERCLES (Protrusions). FLOWERS: BELL SHAPED.

PALE YELLOW-GREEN, FRUITS, ORANGE-RED TO RED

ELEVATION

RANGE: &gt;4200 FT.

COUNTIES: COCHISE AND SONORA, MEXICO

HABITAT: SEMIDESERT GRASSLAND WITH SMALL SHRUBS, AGAVE, OTHER CACTI, AND GRAMA GRASS.

GROWS ON GRAY LIMESTONE HILLS.

NAME: HUACHUCA WATER UMBEL

*LILAEOPSIS SCHAFFNERIANA ssp RECURVA*

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: HERBACEOUS, SEMI-AQUATIC PERENNIAL IN THE PARSLEY FAMILY

(UMBELLIFERAE) WITH SLENDER ERECT, HOLLOW, LEAVES THAT GROW

FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10

FLOWERED UMBELS ARISE FROM ROOT NODES.

ELEVATION

RANGE: 3500-8500 FT.

COUNTIES: PIMA, SANTA CRUZ, COCHISE

HABITAT: CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

AND IN ADJACENT SONORA, MEXICO, WEST OF THE CONTINENTAL DIVIDE. POPULATIONS ALSO ON FORT HUACHUCA MILITARY RESERVATION. PROPOSED CRITICAL HABITAT IN COCHISE AND SANTA CRUZ COUNTIES (63 FR 71838)

FROM

(FRI) 01. 29' 99 09:53/ST. 09:48/NO. 3561627740 P 5/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

NAME: NEW MEXICAN RIDGE-NOSED RATTLESNAKE *CROTALUS WILLARDI OBSCURUS*

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR. 43 FR 34473, 04-04-1978

DESCRIPTION: SMALL 12-24 INCHES, SECRETIVE GRAYISH-BROWN WITH DISTINCT RIDGE ON THE END OF THE SNOUT. THE DORSAL SURFACE HAS OBSCURE, IRREGULARLY SPACED WHITE CROSSBARS EDGED WITH BROWN (NOT A BOLD PATTERN).

ELEVATION  
RANGE 5600-9000 FT.

COUNTIES: COCHISE

HABITAT: PRESUMABLY CANYON BOTTOMS IN PINE-OAK & PINE-FIR COMMUNITIES WITH ALDER, MAPLE, OAK, & BOX ELDER

THE SUBSPECIES HAS NOT BEEN DOCUMENTED IN ARIZONA. HOWEVER, IT HAS BEEN OBSERVED NEAR THE ARIZONA BORDER IN THE PELONCILLO MOUNTAINS AND LIKELY OCCURS IN THE ARIZONA PORTION OF THAT RANGE AS WELL ANOTHER SUBSPECIES, (*CROTALUS WILLARDI WILLARDI*), IS AN ARIZONA STATE CANDIDATE.

NAME: JAGUAR, UNITED STATES POPULATION

*PANTHERA ONCA*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 39147, 7-22-97

DESCRIPTION: MUSCULAR CAT WITH RELATIVELY SHORT, MASSIVE LIMBS AND A DEEP-CHESTED BODY. CINNAMON-BUFF IN COLOR WITH BLACK SPOTS.

ELEVATION  
RANGE: <8000 FT.

COUNTIES: COCHISE, PIMA

HABITAT: IN ARIZONA, RANGED WIDELY THROUGHOUT A VARIETY OF HABITATS FROM SONORAN DESERT TO CONIFER FORESTS

MOST RECORDS ARE FROM THE MADREAN EVERGREEN-WOODLAND, SHRUB-INVADDED SEMI-DESERT GRASSLAND, AND ALONG RIVERS. HISTORIC RANGE IS CONSIDERED TO HAVE EXTENDED BEYOND THE COUNTIES LISTED ABOVE. REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. THE MOST RECENT RECORDS OF A JAGUAR IN THE U.S. ARE FROM THE NEW MEXICO/ARIZONA BORDER AREA AND IN SOUTHCENTRAL ARIZONA. BOTH IN 1996, AND CONFIRMED THROUGH PHOTOGRAPHS. UNCONFIRMED SIGHTINGS AND TRACKS CONTINUE TO BE REPORTED. THIS SPECIES HAS A SIGNED CONSERVATION AGREEMENT IN PLACE, BUT THE DEVELOPMENT OF THE AGREEMENT WAS NOT SUFFICIENT TO REMOVE THE NEED TO LIST THIS SPECIES

NAME: JAGUARUNDI

*FELIS YAGOUAROUNDI TOLTECA*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR. 41 FR 24084; 06-14-76

DESCRIPTION: SMALL CAT WITH SHORT LEGS; SLENDER, ELONGATE BODY; AND LONG TAIL. HEAD SMALL & FLATTENED WITH SHORT ROUNDED EARS. REDDISH-YELLOW OR BLACKISH TO BROWN-GRAY IN COLOR AND WITHOUT SPOTS.

ELEVATION  
RANGE: 3500-6000 FT.

COUNTIES: SANTA CRUZ, PIMA, COCHISE

HABITAT: CAN BE FOUND IN A VARIETY OF HABITATS (SEE BELOW)

SEMI-ARID THORNY FORESTS, DECIDUOUS FORESTS, HUMID PRE-MONTANE FORESTS, UPLAND DRY SAVANNAHS, SWAMPY GRASSLANDS, RIPARIAN AREAS, AND DENSE BRUSH. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. NO SPECIMENS HAVE BEEN COLLECTED IN ARIZONA.

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

NAME: LESSER LONG-NOSED BAT

*LEPTONYCTERIS CURASOAE YERBABUENAE*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 53 FR 38455. 09-30-88

DESCRIPTION: ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE.  
YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW.  
TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

ELEVATION

RANGE: &lt;8000 FT.

COUNTIES: COCHISE, PIMA, SANTA CRUZ, GRAHAM, PINAL, MARICOPA

HABITAT: DESERT SCRUB HABITAT WITH AGAVE AND COLUMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA, USUALLY FROM APRIL TO SEPTEMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

NAME: MEXICAN GRAY WOLF

*CANIS LUPUS BAILEYI*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001. 03-11-67: 43  
FR 1912. 03-09-78

DESCRIPTION: LARGE DOG-LIKE CARNIVORE WITH VARYING COLOR, BUT USUALLY A  
SHADE OF GRAY. DISTINCT WHITE LIP LINE AROUND MOUTH. WEIGH 60-  
90 POUNDS.

ELEVATION

RANGE: 4,000-12,000 FT.

COUNTIES: APACHE, COCHISE, GREENLEE, PIMA, SANTA CRUZ

HABITAT: CHAPPARAL, WOODLAND, AND FORESTED AREAS. MAY CROSS DESERT AREAS.

HISTORIC RANGE IS CONSIDERED TO BE LARGER THAN THE COUNTIES LISTED ABOVE. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE (COCHISE, PIMA, SANTA CRUZ) CONTINUE TO BE RECEIVED. INDIVIDUALS MAY STILL PERSIST IN MEXICO. EXPERIMENTAL NONESSENTIAL POPULATION INTRODUCED IN THE BLUE PRIMITIVE AREA OF GREENLEE AND APACHE COUNTIES.

NAME: OCELOT

*FELIS PARDALIS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 47 FR 31670: 07-21-82

DESCRIPTION: MEDIUM-SIZED SPOTTED CAT WHOSE TAIL IS ABOUT 1/2 THE LENGTH  
OF HEAD AND BODY. YELLOWISH WITH BLACK STREAKS AND STRIPES  
RUNNING FROM FRONT TO BACK. TAIL IS SPOTTED AND FACE IS LESS  
HEAVILY STREAKED THAN THE BACK AND SIDES.

ELEVATION

RANGE: &lt;8000 FT.

COUNTIES: SANTA CRUZ, PIMA, COCHISE

HABITAT: HUMID TROPICAL &amp; SUB-TROPICAL FORESTS, SAVANNAHS, AND SEMI-ARID THORN SCRUB.

MAY PERSIST IN PARTLY-CLEARED FORESTS, SECOND-GROWTH WOODLAND, AND ABANDONED CULTIVATION REVERTED TO BRUSH. UNIVERSAL COMPONENT IS PRESENCE OF DENSE COVER. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED.

FROM

(FRI) 01. 29' 99 09:54/ST. 09:48/NO. 3561627740 P 7/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

NAME: BEAUTIFUL SHINER

*CYPRINELLA FORMOSA*

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 8-31-1984

DESCRIPTION: SMALL (2.5 INCHES) SHINY MINNOW AND VERY SIMILAR TO RED SHINER.  
MALES COLORFUL DURING BREEDING (YELLOW-ORANGE OR ORANGE  
ON CAUDAL AND LOWER FINS AND BLuish BODY.

ELEVATION

RANGE: <4500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MEDIUM SIZED STREAMS AND PONDS WITH SAND, GRAVEL, AND ROCK BOTTOMS.

VIRTUALLY EXTIRPATED IN THE UNITED STATES, WITH THE EXCEPTION OF A FEW ISOLATED POPULATIONS ON NATIONAL WILDLIFE REFUGES AND IN MEXICO. SAME CRITICAL HABITAT AS YAQUI CHUB AND CATFISH (SEE 49 FR 34490, 08-31-1984).

NAME: YAQUI CATFISH

*ICTALURUS PRICEI*

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 08-31-1984

DESCRIPTION: SIMILAR TO CHANNEL CATFISH (*Ictalurus punctatus*) EXCEPT ANAL FIN  
BASE IS SHORTER AND THE DISTAL MARGIN OF THE ANAL FIN IS  
BROADLY ROUNDED WITH 23-25 SOFT RAYS. BODY USUALLY  
PROFUSELY SPECKLED.

ELEVATION

RANGE. 4000-5000 FT.

COUNTIES: COCHISE

HABITAT: MODERATE TO LARGE STREAMS WITH SLOW CURRENT OVER SAND AND ROCK BOTTOMS

CRITICAL HABITAT ALL AQUATIC HABITATS IN THE MAIN PORTION OF SAN BERNADINO NATIONAL WILDLIFE REFUGE

NAME: YAQUI CHUB

*GILA PURPUREA*

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 08-31-1984

DESCRIPTION: MEDIUM SIZED MINNOW (<6 INCHES) DARK COLORED, LIGHTER BELOW.  
DARK TRIANGULAR CAUDAL SPOT

ELEVATION

RANGE. 4000-6000 FT.

COUNTIES: COCHISE (AZ), MEXICO

HABITAT: DEEP POOLS OF SMALL STREAMS, POOLS, OR PONDS NEAR UNDERCUT BANKS.

CRITICAL HABITAT INCLUDES ALL AQUATIC HABITATS OF THE MAIN PORTION SAN BERNADINO NATIONAL WILDLIFE REFUGE.

FROM

(FRI) 01.29.99 09:54/ST. 09:48/NO. 3551627740 P 8/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

NAME: YAQUI TOPMINNOW

*POECILIOPSIS OCCIDENTALIS SONORIENSIS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES) TOPMINNOW GUPPY-LIKE. LIVE BEARING. LACKING  
DARK SPOTS. BREEDING MALES JET BLACK WITH YELLOW FINS.

ELEVATION

RANGE: <4500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MODERATE SIZED STREAMS, SPRINGS, & CIENEGAS GENERALLY IN SHALLOWS

NAME: AMERICAN PEREGRINE FALCON

*FALCO PEREGRINUS ANATUM*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 35 FR 16047, 10-13-70: 35  
FR 3495, 05-02-70

DESCRIPTION: A RECLUSIVE, CROW-SIZED FALCON SLATY BLUE ABOVE WHITISH  
BELOW WITH FINE DARK BARRING. THE HEAD IS BLACK AND APPEARS  
TO BE MASKED OR HELMETED. WINGS LONG AND POINTED. LOUD  
WAILING CALLS ARE GIVEN DURING BREEDING PERIOD.

ELEVATION

RANGE: 3500-9000 FT

COUNTIES: MOHAVE COCONINO NAVAJO APACHE SANTA CRUZ MARICOPA COCHISE YAVAPAI GILA PINAL PIMA  
GREENLEE GRAHAM

HABITAT: CLIFFS AND STEEP TERRAIN USUALLY NEAR WATER OR WOODLANDS WITH ABUNDANT PREY

THIS IS A WIDE-RANGING MIGRATORY BIRD THAT USES A VARIETY OF HABITATS. BREEDING BIRDS ARE YEAR-  
ROUND RESIDENTS. OTHER BIRDS WINTER AND MIGRATE THROUGH ARIZONA. SPECIES IS ENDANGERED FROM  
REPRODUCTIVE FAILURE FROM PESTICIDES. SPECIES HAS BEEN PROPOSED FOR DELISTING (83 FR 45446) BUT  
STILL RECEIVES FULL PROTECTION UNDER ESA

NAME: BALD EAGLE

*HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE. ADULTS HAVE WHITE HEAD AND TAIL HEIGHT 28 - 36".  
WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF  
MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION

RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA,  
GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS.  
AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-  
14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS  
SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF  
HABITAT CONTINUES TO BE A PROBLEM.

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

NAME: CACTUS FERRUGINOUS PYGMY-OWL

*GLAUCIDIUM BRASILIANUM CACTORUM*

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: No CFR: 62 FR 10730, 3-10-97

DESCRIPTION: SMALL (APPROX. 77), DIURNAL OWL REDDISH BROWN OVERALL WITH CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME INDIVIDUALS ARE GRAYISH BROWN

ELEVATION

RANGE: &lt;4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, COCHISE

HABITAT: MATURE COTTONWOODWILLOW, MESQUITE BOSQUES, AND SONORAN DESERTSCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN. ADDITIONAL SURVEYS ARE NEEDED. LISTING EFFECTIVE APRIL 9, 1997. PROPOSED CRITICAL HABITAT IN PIMA, COCHISE, PINAL AND MARICOPA COUNTIES (64 FR 71821).

NAME: MEXICAN SPOTTED OWL

*STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 58 FR 14873, 04-11-91

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE

ELEVATION

RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDEROSA PINE/GAMBEL OAK TYPE. IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERRED.

NAME: NORTHERN APLOMADO FALCON

*FALCO FEMORALIS SEPTENTRIONALIS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 6666, 01-25-86

DESCRIPTION: RUFOUS UNDERPARTS, GRAY BACK, LONG BANDED TAIL, AND A DISTINCT BLACK AND WHITE FACIAL PATTERN, SMALLER THAN PEREGRINE LARGER THAN KESTREL BREEDS BETWEEN MARCH- JUNE

ELEVATION

RANGE: 3600-8000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: GRASSLAND AND SAVANNAH

SPECIES FORMERLY NESTED IN SOUTHWESTERN US. NOW OCCURS AS AN ACCIDENTAL. GOOD HABITAT HAS LOW GROUND COVER AND MESQUITE OR YUCCA FOR NESTING PLATFORMS. CONTINUED USE OF PESTICIDES IN MEXICO ENDANGERS THIS SPECIES. NO RECENT CONFIRMED REPORTS FOR ARIZONA.

FROM

(FRI) 01. 29' 99 09:54/ST. 09:48/NO. 3561627740 P 10/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

NAME: SOUTHWESTERN WILLOW FLYCATCHER *EMPIDONAX TRAILLII EXTIMUS*

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 8") GRAYISH-GREEN BACK AND WINGS,  
WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH  
BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

ELEVATION  
RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM,  
YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO  
SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO  
DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR  
REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT ON PORTIONS OF THE 100-YEAR  
FLOODPLAIN ON SAN PEDRO AND VERDE RIVERS; WET BEAVER AND WEST CLEAR CREEKS, INCLUDING TAVASCI  
MARSH AND ISTER FLAT; THE COLORADO RIVER; THE LITTLE COLORADO RIVER, AND THE WEST, EAST, AND  
SOUTH FORKS OF THE LITTLE COLORADO RIVER. REFERENCE 60 CFR:82 FR 39129, 7/22/97.

NAME: WHOOPING CRANE

*GRUS AMERICANA*

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967; 43  
FR 20938, 05-15-73

DESCRIPTION: TALLEST AMERICAN BIRD (UP TO 5 FEET) SNOWY WHITE, LONG NECK  
AND LEGS, BLACK WING TIPS, RED CROWN, AND BLACK WEDGE  
SHAPED PATCH OF FEATHERS BEHIND ITS EYE.

ELEVATION  
RANGE: 4500 FT

COUNTIES: COCHISE

HABITAT: MARSHES, PRAIRIES, RIVER BOTTOMS

BIRDS IN THE ROCKY MOUNTAIN POPULATION ARE OCCASIONAL VISITORS IN ARIZONA DURING MIGRATION  
USUALLY NEAR WILCOX PLAYA.

NAME: SONORA TIGER SALAMANDER

*AMBYSTOMA TIGRINUM STEBBINSI*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: 2.3 TO 4.9" SNOUT-VENT LENGTH WITH LIGHT-COLORED BANDS ON A  
DARK BACKGROUND. AQUATIC LARVAE ARE UNIFORM DARK COLOR  
WITH PLUME-LIKE GILLS AND TAIL FINS.

ELEVATION  
RANGE: 4000-8300 FT.

COUNTIES: SANTA CRUZ, COCHISE

HABITAT: STOCK TANKS AND IMPOUNDED CIENEGAS IN SAN RAFAEL VALLEY, HUACHUCA MOUNTAINS

ALSO OCCURS IN THE FOOTHILLS OF THE EAST SLOPE OF THE PATAGONIA AND HUACHUCA MOUNTAINS.  
POPULATIONS ALSO ON FORT HUACHUCA.

FROM

(FRI) 01. 29' 99 09:55/ST. 09:48/NO. 3561627740 P 11/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

## 2) PROPOSED

TOTAL= 1

NAME: BLUMER'S DOCK (CHIRICAHUA)

*RUMEX ORTHONEURUS*

STATUS: PROPOSED

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: LARGE LONG-LIVED PERENNIAL PLANT IN THE BUCKWHEAT FAMILY

THAT CAN REACH 1.2-2.0 METERS. LARGE BROAD, OVAL SEMI-

SUCCULENT LEAVES ARE BRIGHT GREEN. CONSPICUOUS SECONDARY

VEINS AT RIGHT ANGLES TO THE MIDVEIN

ELEVATION

RANGE: 6500-9000 FT

COUNTIES: APACHE, COCHISE, GILA, GRAHAM, NAVAJO

HABITAT: MID TO HIGH ELEVATION SPRINGS, STREAMS, & WETLANDS WITH MOIST ORGANIC SOILS OR SHADED CANYONS

SPECIES FOUND IN CHIRICAHUA, PINALENO, HUACHUCA, SIERRA ANCHA, AND WHITE MOUNTAINS. SPECIES FOUND ON CORONADO, A.S. TONTO, SOME ON AND COCONINO. SPECIES ALSO FOUND IN WESTERN AND NORTHERN NEW MEXICO (GILA, SANTA FE, AND CARSON NF).

FROM

(FRI) 01. 29' 99 09:55/ST. 09:48/NO. 3561627740 P 12/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

### 3) CANDIDATE

TOTAL=5

NAME: LEMMON FLEABANE

*ERIGERON LEMMONII*

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: A PROSTRATE PERENNIAL IN THE SUNFLOWER FAMILY. STEMS AND LEAVES ARE DENSELY HAIRY. FLOWERS LOOK LIKE SMALL DELICATE DAISIES WITH WHITE TO LIGHT PURPLE OUTER PETALS AND YELLOW INNER PETALS.

ELEVATION

RANGE: 1500-6000 FT.

COUNTIES: COCHISE

HABITAT: GROWS IN DENSE CLUMPS IN CREVICES, LEDGES, AND BOULDERS IN CANYON BOTTOMS IN PINE-OAK WOODLAND

ONE SITE ON FORT HUACHUCA MILITARY RESERVATION

NAME: GILA CHUB

*GILA INTERMEDIA*

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: DEEP COMPRESSED BODY, FLAT HEAD, DARK OLIVE-GRAY COLOR ABOVE, SILVER SIDES. ENDEMIC TO GILA RIVER BASIN.

ELEVATION

RANGE 2000 - 3500 FT.

COUNTIES: SANTA CRUZ, GILA, GREENLEE, PIMA, COCHISE, GRAHAM, YAVAPAI

HABITAT: POOLS, SPRINGS, CIENEGAS, AND STREAMS

MULTIPLE PRIVATE LANDOWNERS, INCLUDING THE NATURE CONSERVANCY, THE AUDUBON SOCIETY, AND OTHERS, ALSO FT. HUACHUCA. SPECIES ALSO FOUND IN SONORA, MEXICO.

NAME: HUACHUCA SPRINGSNAIL

*PYRGULOPSIS THOMPSONI*

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: VERY SMALL (1.7-3.2mm) CONICAL SHELL. IDENTIFICATION MUST BE VERIFIED BY CHARACTERISTICS OF REPRODUCTIVE ORGANS.

ELEVATION

RANGE 4500-6000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: AQUATIC AREAS, SMALL SPRINGS WITH VEGETATION SLOW TO MODERATE FLOW

INDIVIDUALS FOUND ON FIRM SUBSTANCES (ROOTS, WOOD, AND ROCKS) OTHER POPULATIONS FOUND ON FORT HUACHUCA MILITARY PROPERTY

FROM

(FRI) 01. 29' 99 09:55/ST. 09:48/NO. 3561627740 P 13/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

NAME: MOUNTAIN PLOVER

*CHARADRIUS MONTANUS*

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: WADING BIRD; COMPACTLY BUILT; IN BREEDING SEASON WITH WHITE  
FOREHEAD AND LINE OVER THE EYE; CONTRASTING WITH DARK  
CROWN; NONDESCRIPT IN WINTER. VOICE IS LOW, VARIABLE WHISTLE. ELEVATION

RANGE: VARIABLE FT.

COUNTIES: YUMA, SANTA CRUZ, PIMA, COCHISE, PINAL, APACHE

HABITAT: OPEN ARID PLAINS, SHORT-GRASS PRAIRIES, AND SCATTERED CACTUS.

AZ PROVIDES WINTERING HABITAT ONLY. SPECIES PRIMARILY FOUND IN ROCKY MOUNTAIN STATES FROM  
CANADA TO MEXICO

NAME: CHIRICAHUA LEOPARD FROG

*RANA CHIRICAHUENSIS*

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: CREAM COLORED TUBERCLES (spots) ON A DARK BACKGROUND ON  
THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE  
INTERRUPTED AND DEFLECTED MEDIANLY. AND A CALL GIVEN OUT OF  
WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRO ELEVATION

RANGE: 3000-3300 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE FREE FROM INTRODUCED FISH  
AND BULLFROGS

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER ARE  
THOUGHT TO BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES. SPECIES ALSO FOUND ON FORT  
HUACHUCA

FROM

(FRI) 01. 29' 99 09:55/ST. 09:48/NO. 3561627740 P 14/19

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

1/14/99

## CONSERVATION AGREEMENT

TOTAL= 1

NAME: RAMSEY CANYON LEOPARD FROG

*RANA SUBAQUAVOCALIS*

STATUS: NONE

CRITICAL HAB No RECOVERY PLAN. No CFR:

DESCRIPTION: BROWN OR GREEN FROG, 2.5 TO 4 INCHES LONG; SPOTS ROUNDED

WITH LIGHT BORDERS; DORSOLATERAL FOLDS ARE INTERRUPTED

POSTERIORLY AND DEFLECTED MEDIALY; YELLOWISH PIGMENTATION

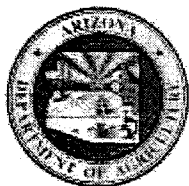
ON THE GROIN WHICH MAY EXTEND INTO THE POSTERIOR VENTER

ELEVATION  
RANGE: 5,000 FT FT.

COUNTIES: COCHISE

HABITAT: STREAM AND PONDED AQUATIC HABITATS

CONSERVATION AGREEMENT BETWEEN THE SERVICE, ARIZONA GAME AND FISH DEPARTMENT, THE NATURE  
CONSERVANCY, BUREAU OF LAND MANAGEMENT, CORONADO NATIONAL FOREST, THE US ARMY INTELLIGENCE  
CENTER AND FORT HUACHUCA, AND A PRIVATE LANDOWNER WAS FINALIZED JULY 1996



# ARIZONA

## DEPARTMENT OF AGRICULTURE

*Quality...from the land to you*

### Feedback A. Highly Safeguarded Protected Native Plants



The following list includes those species of native plants and parts of plants, including the seeds and fruit, whose prospects for survival in Arizona are in jeopardy or which are in danger of extinction.

#### **AGAVACEAE** Agave Family (including Nolinaceae)

- ◆ *Agave arizonica* Gentry & Weber—Arizona agave
- ◆ *Agave delamateri* Hodgson & Slauson
- ◆ *Agave murpheyi* Gibson—Hohokam agave
- ◆ *Agave parviflora* Torr.—Santa Cruz striped agave, Small-flowered agave
- ◆ *Agave schottii* Engelm. var. *treleasei* (Toumey) Kearney & Peebles

#### **APIACEAE** Parsley Family. [= Umbelliferae]

- ◆ *Lilaeopsis schaffneriana* (Schlecht.) Coult. & Rose ssp. *recurva* (A. W. Hill) Affolter-Cienega false rush, Huachuca water umbel.
- ◆ Syn.: *Lilaeopsis recurva* A. W. Hill

#### **APOCYNACEAE** Dogbane Family

- ◆ *Amsonia kearneyana* Woods.—Kearney's bluestar
- ◆ *Cycladenia humilis* Benth. var. *jonesii* (Eastw.) Welsh & Atwood—Jones' cycladenia

#### **ASCLEPIADACEAE** Milkweed Family

- ◆ *Asclepias welshii* N. & P. Holmgren—Welsh's milkweed

#### **ASTERACEAE** Sunflower Family [= Compositae]

- ◆ *Erigeron lemmonii* Gray—Lemmon fleabane
- ◆ *Senecio franciscanus* Greene—San Francisco Peaks groundsel
- ◆ *Senecio huachucae* Gray—Huachuca groundsel

#### **BURSERACEAE** Torch Wood Family

- ◆ *Bursera fagaroides* (H.B.K.) Engler—Fragrant bursera

#### **CACTACEAE** Cactus Family

- ◆ *Carnegiea gigantea* (Engelm.) Britt. & Rose—Saguaro: 'Crested' or 'Fan-top' form only
- ◆ Syn.: *Cereus giganteus* Engelm.
- ◆ *Coryphantha recurvata* (Engelm.) Britt. & Rose—Golden-chested beehive cactus
- ◆ Syn.: *Mammillaria recurvata* Engelm.
- ◆ *Coryphantha robbinsorum* (W. H. Earle) A. Zimmerman—Cochise pincushion cactus
- ◆ Robbin's cory cactus.
- ◆ Syn.: *Cochiseia robbinsorum* W.H. Earle
- ◆ *Coryphantha scheeri* (Kuntze) L. Benson var. *robustispina* (Schott) L. Benson—Scheer's strong-spined cory cactus.
- ◆ Syn.: *Mammillaria robustispina* Schott
- ◆ *Echinocactus horizonthalonius* Lemaire var. *nicholii* L. Benson—Nichol's Turk's head cactus
- ◆ *Echinocereus triglochidiatus* Engelm. var. *arizonicus* (Rose ex Orcutt) L. Benson—Arizona hedgehog cactus
- ◆ *Echinomastus erectocentrus* (Coult.) Britt. & Rose var. *acunensis* (W.T.Marshall) L.Benson—Acuna cactus
- ◆ Syn.: *Neolloydia erectocentra* (Coult.) L. Benson var. *acunensis* (W. T. Marshall) L. Benson
- ◆ *Pediocactus bradyi* L. Benson—Brady's pincushion cactus
- ◆ *Pediocactus paradinei* B. W. Benson—Paradine plains cactus
- ◆ *Pediocactus peeblesianus* (Croizat) L. Benson var. *fickeiseniae* L. Benson
- ◆ *Pediocactus peeblesianus* (Croizat) L. Benson var. *peeblesianus* Peebles' Navajo cactus, Navajo plains cactus
- ◆ Syn.: *Navajoa peeblesiana* Croizat
- ◆ *Pediocactus sileri* (Engelm.) L. Benson—Siler pincushion cactus
- ◆ Syn.: *Utahia sileri* (Engelm.) Britt. & Rose

#### **COCHLOSPERMACEAE** Cochlospermum Family

- ◆ *Amoreuxia gonzalezii* Sprague & Riley

#### **CYPERACEAE** Sedge Family

- ◆ *Carex specuicola* J. T. Howell—Navajo sedge

#### **FABACEAE** Pea Family [=Leguminosae]

- ◆ *Astragalus cremnophylax* Barneby var. *cremnophylax* Sentry milk vetch
- ◆ *Astragalus holmgreniorum* Barneby—Holmgren milk-vetch
- ◆ *Dalea tentaculoides* Gentry—Gentry indigo bush

#### **LENNOACEAE** Lennoa Family

- ◆ *Pholisma arenarium* Nutt.—Scaly-stemmed sand plant
- ◆ *Pholisma sonora* (Torr. ex Gray) Yatskievych—Sandfood, sandroot
- ◆ Syn.: *Ammobroma sonora* Torr. ex Gray

#### **LILIACEAE** Lily Family

- ◆ *Allium gooddingii* Ownbey—Goodding's onion

#### **ORCHIDACEAE** Orchid Family

- ◆ *Cypripedium calceolus* L. var. *pubescens* (Willd.) Correll—Yellow lady's slipper
- ◆ *Hexalectris warnockii* Ames & Correll—Texas purple spike
- ◆ *Spiranthes delitescens* C. Sheviak

**POACEAE** Grass Family [=Gramineae]

- ◆ *Puccinellia parishii* A.S. Hitchc.—Parish alkali grass

**POLYGONACEAE** Buckwheat Family

- ◆ *Rumex orthoneurus* Rech. f.

**PSILOTACEAE** Psilotum Family

- ◆ *Psilotum nudum* (L.) Beauv. Bush Moss, Whisk Fern

**RANUNCULACEAE** Buttercup Family

- ◆ *Cimicifuga arizonica* Wats.—Arizona bugbane
- ◆ *Clematis hirsutissima* Pursh var. *arizonica* (Heller) Erickson—Arizona leatherflower.

**ROSACEAE** Rose Family

- ◆ *Purshia subintegra* (Kearney) J. Hendrickson—Arizona cliffrose, Burro Creek cliffrose
- ◆ Syn.: *Cowania subintegra* Kearney

**SALICACEAE** Willow Family

- ◆ *Salix arizonica* Dorn—Arizona willow

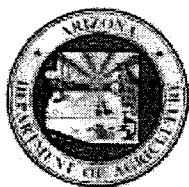
**SCROPHULARIACEAE** Figwort Family

- ◆ *Penstemon discolor* Keck—Variegated beardtongue

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# ARIZONA

## DEPARTMENT OF AGRICULTURE

*Quality...from the land to you*

### [Feedback](#) B. Salvage Restricted Protected Native Plants



The following list includes those species of native plants that are not included in the highly safeguarded category but are subject to damage by theft or vandalism. In addition to the plants listed under Agavaceae, Cactaceae, Liliaceae, and Orchidaceae all other species in these families are salvage restricted protected native plants.

#### **AGAVACEAE** Agave Family (including Nolinaceae)

- ◆ *Agave chrysantha* Peebles
- ◆ *Agave deserti* Engelm. ssp. *simplex* Gentry—Desert agave
- ◆ *Agave mckelveyana* Gentry
- ◆ *Agave palmeri* Engelm.
- ◆ *Agave parryi* Engelm. var. *couseii* (Engelm. ex Trel.) Kearney & Peebles
- ◆ *Agave parryi* Engelm. var. *huachucensis* (Baker) Little ex L. Benson  
Syn.: *Agave huachucensis* Baker
- ◆ *Agave parryi* Engelm. var. *parryi*
- ◆ *Agave schottii* Engelm. var. *schottii* – *Shindigger*
- ◆ *Agave toumeyana* Trel. ssp. *bella* (Breitung) Gentry
- ◆ *Agave toumeyana* Trel. ssp. *toumeyana*
- ◆ *Agave utahensis* Engelm. spp. *kaibabensis* (McKelvey) Gentry  
Syn.: *Agave kaibabensis* McKelvey
- ◆ *Agave utahensis* Engelm. var. *utahensis*
- ◆ *Dasyllirion wheeleri* Wats.—Sotol, desert spoon
- ◆ *Nolina bigelovii* (Torr.) Wats.—Bigelow's nolina
- ◆ *Nolina microcarpa* Wats.—Beargrass, sacahuista
- ◆ *Nolina parryi* Wats.—Parry's nolina
- ◆ *Nolina texana* Wats. var. *compacta* (Trel.) Johnst.—Bunchgrass
- ◆ *Yucca angustissima* Engelm. var. *angustissima*
- ◆ *Yucca angustissima* Engelm. var. *kanabensis* (McKelvey) Reveal  
Syn.: *Yucca kanabensis* McKelvey
- ◆ *Yucca arizonica* McKelvey
- ◆ *Yucca baccata* Torr. var. *baccata*—Banana yucca
- ◆ *Yucca baccata* Torr. var. *vespertina* McKelvey
- ◆ *Yucca baileyi* Woot. & Standl. var. *intermedia* (McKelvey) Reveal  
Syn.: *Yucca navajoa* Webber
- ◆ *Yucca brevifolia* Engelm. var. *brevifolia*—Joshua tree
- ◆ *Yucca brevifolia* Engelm. var. *jaegeriana* McKelvey
- ◆ *Yucca elata* Engelm. var. *elata*—Soaptree yucca, palmilla
- ◆ *Yucca elata* Engelm. var. *utahensis* (McKelvey) Reveal

- ◆ Syn.: *Yucca utahensis* McKelvey
- ◆ *Yucca elata* Engelm. var. *verdiensis* (McKelvey) Reveal
- ◆ Syn.: *Yucca verdiensis* McKelvey
- ◆ *Yucca harrimaniae* Trel.
- ◆ *Yucca schidigera* Roezl. –Mohave yucca, Spanish dagger
- ◆ *Yucca schottii* Engelm. –Hairy yucca
- ◆ *Yucca thornberi* McKelvey
- ◆ *Yucca whipplei* Torr. var. *whipplei* –Our Lord's candle
- ◆ Syn.: *Yucca newberryi* McKelvey

#### AMARYLLIDACEAE Amaryllis Family

- ◆ *Zephyranthes longifolia* Hemsl. –Plains Rain Lily

#### ANACARDIACEAE Sumac Family

- ◆ *Rhus kearneyi* Barkley –Kearney Sumac

#### ARECACEAE Palm Family [=Palmae]

- ◆ *Washingtonia filifera* (Linden ex Andre) H. Wendl –California fan palm

#### ASTERACEAE Sunflower Family [=Compositae]

- ◆ *Cirsium parryi* (Gray) Petrak ssp. *mogollonicum* Schaak
- ◆ *Cirsium virginensis* Welsh –Virgin thistle
- ◆ *Erigeron kuschei* Eastw. –Chiricahua fleabane
- ◆ *Erigeron piscaticus* Nesom –Fish Creek fleabane
- ◆ *Flaveria macdougalii* Theroux, Pinkava & Keil
- ◆ *Perityle ajoensis* Todson –Ajo rock daisy
- ◆ *Perityle cochisensis* (Niles) Powell –Chiricahua rock daisy
- ◆ *Senecio quaerens* Greene –Gila groundsel

#### BURSERACEAE Torch-Wood Family

- ◆ *Bursera microphylla* Gray –Elephant tree, torote

#### CACTACEAE Cactus Family

- ◆ *Carnegiea gigantea* (Engelm.) Britt. & Rose –Saguaro
- ◆ Syn.: *Cereus giganteus* Engelm.
- ◆ *Coryphantha missouriensis* (Sweet) Britt. & Rose
- ◆ *Coryphantha missouriensis* (Sweet) Britt. & Rose var. *marstonii* (Clover) L. Benson
- ◆ *Coryphantha scheeri* (Kuntze) L. Benson var. *valida* (Engelm.) L. Benson
- ◆ *Coryphantha strobiliformis* (Poselger) var. *orcuttii* (Rose) L. Benson
- ◆ *Coryphantha strobiliformis* (Poselger) var. *strobiliformis*
- ◆ *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *alversonii* (Coult.) L. Benson
- ◆ *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *arizonica* (Engelm.) W. T. Marshall
- ◆ Syn.: *Mammillaria arizonica* Engelm.
- ◆ *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *bisbeeana* (Orcutt) L. Benson
- ◆ *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *deserti* (Engelm.) W. T. Marshall
- ◆ Syn.: *Mammillaria chlorantha* Engelm.
- ◆ *Coryphantha vivipara* (Nutt.) Britt. & Rose var. *rosea* (Clokey) L. Benson
- ◆ *Echinocactus polycephalus* Engelm. & Bigel. var. *polycephalus*
- ◆ *Echinocactus polycephalus* Engelm. & Bigel. var. *xeranthemoides* Engelm. ex Coult
- ◆ Syn.: *Echinocactus xeranthemoides* Engelm. ex Coult.

- ▼ *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *acicularis* L. Benson
- ◆ *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *armatus* L. Benson
- ◆ *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *chrysocentrus* L. Benson
- ◆ *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *engelmannii*
- ◆ *Echinocereus engelmannii* (Parry) Lemaire var. *variegatus* (Engelm.) Engelm. ex Rümpler
- ◆ *Echinocereus fasciculatus* (Engelm. ex B. D. Jackson) L. Benson var. *fasciculatus*  
Syn.: *Echinocereus fendleri* (Engelm.) Rümpler var. *fasciculatus* (Engelm. ex B. D. Jackson) N. P. Taylor, *Echinocereus fendleri* (Engelm.) Rümpler var. *robusta* L. Benson; *Mammillaria fasciculata* Engelm.
- ◆ *Echinocereus fasciculatus* (Engelm. ex B. D. Jackson) L. Benson var. *bonkerae* (Thornber & Bonker) L. Benson.  
Syn.: *Echinocereus boyce-thompsonii* Orcutt var. *bonkerae* Peebles; *Echinocereus fendleri* (Engelm.) Rümpler var. *bonkerae* (Thornber & Bonker) L. Benson
- ◆ *Echinocereus fasciculatus* (Engelm. ex B. D. Jackson) L. Benson var. *boyce-thompsonii* (Orcutt) L. Benson  
Syn.: *Echinocereus boyce-thompsonii* Orcutt
- ◆ *Echinocereus fendleri* (Engelm.) Rümpler var. *boyce-thompsonii* (Orcutt) L. Benson
- ◆ *Echinocereus fendleri* (Engelm.) Rümpler var. *fendleri*
- ◆ *Echinocereus fendleri* (Engelm.) Rümpler var. *rectispinus* (Peebles) L. Benson
- ◆ *Echinocereus leidingii* Peebles
- ◆ *Echinocereus nicholii* (L. Benson) Parfitt.  
Syn.: *Echinocereus engelmannii* (Parry ex Engelm.) Lemaire var. *nicholii* L. Benson
- ◆ *Echinocereus pectinatus* (Scheidw.) Engelm. var. *dasyacanthus* (Engelm.) N. P. Taylor  
Syn.: *Echinocereus pectinatus* (Scheidw.) Engelm. var. *neomexicanus* (Coult.) L. Benson
- ◆ *Echinocereus polyacanthus* Engelm. (1848) var. *polyacanthus*
- ◆ *Echinocereus pseudopectinatus* (N. P. Taylor) N. P. Taylor  
Syn.: *Echinocereus bristolii* W. T. Marshall var. *pseudopectinatus* N. P. Taylor, *Echinocereus pectinatus* (Scheidw.) Engelm. var. *pectinatus sensu* Kearney and Peebles, Arizona Flora, and L. Benson, The Cacti of Arizona and The Cacti of the United States and Canada.
- ◆ *Echinocereus rigidissimus* (Engelm.) Hort. F. A. Haage.  
Syn.: *Echinocereus pectinatus* (Scheidw.) Engelm. var. *rigidissimus* (Engelm.) Engelm. ex Rümpler—Rainbow cactus
- ◆ *Echinocereus triglochidiatus* Engelm. var. *gonacanthus* (Engelm. & Bigel.) Boiss.
- ◆ *Echinocereus triglochidiatus* Engelm. var. *melanacanthus* (Engelm.) L. Benson  
Syn.: *Mammillaria aggregata* Engelm.
- ◆ *Echinocereus triglochidiatus* Engelm. var. *mojavensis* (Engelm.) L. Benson
- ◆ *Echinocereus triglochidiatus* Engelm. var. *neomexicanus* (Standl.) Standl. ex W. T. Marshall.  
Syn.: *Echinocereus triglochidiatus* Engelm. var. *polyacanthus* (Engelm. 1859 non 1848) L. Benson
- ◆ *Echinocereus triglochidiatus* Engelm. var. *triglochidiatus*
- ◆ *Echinomastus erectocentrus* (Coult.) Britt. & Rose var. *erectocentrus*  
Syn.: *Neolloydia erectocentra* (Coult.) L. Benson var. *erectocentra*
- ◆ *Echinomastus intertextus* (Engelm.) Britt. & Rose  
Syn.: *Neolloydia intertexta* (Engelm.) L. Benson
- ◆

- Syn.: *Neolloydia johnsonii* (Perry) L. Benson
- ◆ *Epithelantha micromeris* (Engelm.) Weber ex Britt. & Rose
  - ◆ *Ferocactus cylindraceus* (Engelm.) Orcutt var. *cylindraceus*—Barrel cactus
  - Syn.: *Ferocactus acanthodes* (Lemaire) Britt. & Rose var. *acanthodes*
  - ◆ *Ferocactus cylindraceus* (Engelm.) Orcutt var. *eastwoodiae* (Engelm.) N. P. Taylor
  - Syn.: *Ferocactus acanthodes* (Lemaire) Britt. & Rose var. *eastwoodiae* L. Benson;
  - Ferocactus eastwoodiae* (L. Benson) L. Benson
  - ◆ *Ferocactus cylindraceus* (Engelm.) Orcutt. var. *lecontei* (Engelm.) H. Bravo
  - Syn.: *Ferocactus acanthodes* (Lemaire) Britt. & Rose var. *lecontei* (Engelm.) Lindsay
  - Ferocactus lecontei* (Engelm.) Britt. & Rose
  - ◆ *Ferocactus emoryi* (Engelm.) Orcutt—Barrel cactus
  - Syn.: *Ferocactus covillei* Britt. & Rose
  - ◆ *Ferocactus wislizenii* (Engelm.) Britt. & Rose—Barrel cactus
  - ◆ *Lophocereus schottii* (Engelm.) Britt. & Rose—Senita
  - ◆ *Mammillaria grahamii* Engelm. var. *grahamii*
  - ◆ *Mammillaria grahamii* Engelm. var. *oliviae* (Orcutt) L. Benson
  - Syn.: *Mammillaria oliviae* Orcutt
  - ◆ *Mammillaria heyderi* Mühlenpf. var. *heyderi*
  - Syn.: *Mammillaria gummifera* Engelm. var. *applanata* (Engelm.) L. Benson
  - ◆ *Mammillaria heyderi* Mühlenpf. var. *macdougallii* (Rose) L. Benson
  - Syn.: *Mammillaria gummifera* Engelm. var. *macdougallii* (Rose) L. Benson;
  - Mammillaria macdougallii* Rose
  - ◆ *Mammillaria heyderi* Mühlenpf. var. *meiacantha* (Engelm.) L. Benson
  - Syn.: *Mammillaria gummifera* Engelm. var. *meiacantha* (Engelm.) L. Benson
  - ◆ *Mammillaria lasiacantha* Engelm.
  - ◆ *Mammillaria mainiae* K. Brand.
  - ◆ *Mammillaria microcarpa* Engelm.
  - ◆ *Mammillaria tetrancistra* Engelm.
  - ◆ *Mammillaria thornberi* Orcutt
  - ◆ *Mammillaria viridiflora* (Britt. & Rose) Bödeker.
  - Syn.: *Mammillaria orestra* L. Benson
  - ◆ *Mammillaria wrightii* Engelm. var. *wilcoxii* (Toumey ex K. Schumann) W. T. Marshall
  - Syn.: *Mammillaria wilcoxii* Toumey
  - ◆ *Mammillaria wrightii* Engelm. var. *wrightii*
  - ◆ *Opuntia acanthocarpa* Engelm. & Bigel. var. *acanthocarpa*—Buckhorn cholla
  - ◆ *Opuntia acanthocarpa* Engelm. & Bigel. var. *coloradensis* L. Benson
  - ◆ *Opuntia acanthocarpa* Engelm. & Bigel. var. *major* L. Benson
  - Syn.: *Opuntia acanthocarpa* Engelm. & Bigel var. *ramosa* Peebles
  - ◆ *Opuntia acanthocarpa* Engelm. & Bigel. var. *thornberi* (Thornber & Bonker) L. Benson
  - Syn.: *Opuntia thornberi* Thornber & Bonker
  - ◆ *Opuntia arbuscula* Engelm.—Pencil cholla
  - ◆ *Opuntia basilaris* Engelm. & Bigel. var. *aurea* (Baxter) W. T. Marshall—Yellow beavertail
  - Syn.: *Opuntia aurea* Baxter
  - ◆ *Opuntia basilaris* Engelm. & Bigel. var. *basilaris*—Beavertail cactus
  - ◆ *Opuntia basilaris* Engelm. & Bigel. var. *longiareolata* (Clover & Jotter) L. Benson
  - ◆ *Opuntia basilaris* Engelm. & Bigel. var. *treleasei* (Coult.) Toumey
  - ◆ *Opuntia bigelovii* Engelm.—Teddy-bear cholla
  - ◆ *Opuntia campii* ined.

- ▼ *Opuntia canadensis* Griseb. (*O. phaeacantha* Engelm. var. *laevis* × *major* and *O. gilvescens* Griffiths).
- ◆ *Opuntia chlorotica* Engelm. & Bigel.—Pancake prickly-pear
- ◆ *Opuntia clavata* Engelm.—Club cholla
- ◆ *Opuntia curvospina* Griffiths
- ◆ *Opuntia echinocarpa* Engelm. & Bigel.—Silver cholla
- ◆ *Opuntia emoryi* Engelm.—Devil cholla  
Syn.: *Opuntia stanlyi* Engelm. ex B. D. Jackson var. *stanlyi*
- ◆ *Opuntia engelmannii* Salm-Dyck ex Engelm. var. *engelmannii*—Engelmann's prickly-pear  
Syn.: *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington
- ◆ *Opuntia engelmannii* Salm-Dyck ex Engelm. var. *flavospina* (L. Benson) Parfitt & Pinkava  
Syn.: *Opuntia phaeacantha* Engelm. var. *flavispina* L. Benson
- ◆ *Opuntia erinacea* Engelm. & Bigel. var. *erinacea*—Mohave prickly-pear
- ◆ *Opuntia erinacea* Engelm. & Bigel. var. *hystricina* (Engelm. & Bigel.) L. Benson  
Syn.: *Opuntia hystricina* Engelm. & Bigel.
- ◆ *Opuntia erinacea* Engelm. & Bigel. var. *ursina* (Weber) Parish—Grizzly bear prickly-pear  
Syn.: *Opuntia ursina* Weber
- ◆ *Opuntia erinacea* Engelm. & Bigel. var. *utahensis* (Engelm.) L. Benson  
Syn.: *Opuntia rhodantha* Schum.
- ◆ *Opuntia fragilis* Nutt. var. *brachyarthra* (Engelm. & Bigel.) Coult.
- ◆ *Opuntia fragilis* Nutt. var. *fragilis*—Little prickly-pear
- ◆ *Opuntia fulgida* Engelm. var. *fulgida*—Jumping chain-fruit cholla
- ◆ *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coult.
- ◆ *Opuntia imbricata* (Haw.) DC.—Tree cholla
- ◆ *Opuntia X kelvinensis* V. & K. Grant pro sp.  
Syn.: *Opuntia kelvinensis* V. & K. Grant
- ◆ *Opuntia kleiniae* DC. var. *tetracantha* (Toumey) W. T. Marshall  
Syn.: *Opuntia tetrancistra* Toumey
- ◆ *Opuntia kunzei* Rose.  
Syn.: *Opuntia stanlyi* Engelm. ex B. D. Jackson var. *kunzei* (Rose) L. Benson;  
*Opuntia kunzei* Rose var. *wrightiana* (E. M. Baxter) Peebles; *Opuntia wrightiana* E. M. Baxter
- ◆ *Opuntia leptocaulis* DC.—Desert Christmas cactus, Pencil cholla
- ◆ *Opuntia littoralis* (Engelm.) Cockl. var. *vaseyi* (Coult.) Benson & Walkington
- ◆ *Opuntia macrocentra* Engelm.—Purple prickly-pear  
Syn.: *Opuntia violacea* Engelm. ex B. D. Jackson var. *macrocentra* (Engelm.) L. Benson; *Opuntia violacea* Engelm. ex B. D. Jackson var. *violacea*
- ◆ *Opuntia macrorhiza* Engelm. var. *macrorhiza*—Plains prickly-pear  
Syn.: *Opuntia plumbea* Rose
- ◆ *Opuntia macrorhiza* Engelm. var. *pottsii* (Salm-Dyck) L. Benson
- ◆ *Opuntia martiniana* (L. Benson) Parfitt  
Syn.: *Opuntia littoralis* (Engelm.) Cockerell var. *martiniana* (L. Benson) L. Benson;  
*Opuntia macrocentra* Engelm. var. *martiniana* L. Benson
- ◆ *Opuntia nicholii* L. Benson—Navajo Bridge prickly-pear
- ◆ *Opuntia parishii* Orcutt.  
Syn.: *Opuntia stanlyi* Engelm. ex B. D. Jackson var. *parishii* (Orcutt) L. Benson
- ◆ *Opuntia phaeacantha* Engelm. var. *laevis* (Coult.) L. Benson

- ◆ *Opuntia phaeacantha* Engelm. var. *major* Engelm.
- ◆ *Opuntia phaeacantha* Engelm. var. *phaeacantha*
- ◆ *Opuntia phaeacantha* Engelm. var. *superbospina* (Griffiths) L. Benson
- ◆ *Opuntia polyacantha* Haw. var. *juniperina* (Engelm.) L. Benson
- ◆ *Opuntia polyacantha* Haw. var. *rufispina* (Engelm.) L. Benson
- ◆ *Opuntia polyacantha* Haw. var. *trichophora* (Engelm. & Bigel.) L. Benson
- ◆ *Opuntia pulchella* Engelm.—Sand cholla
- ◆ *Opuntia ramosissima* Engelm.—Diamond cholla
- ◆ *Opuntia santa-rita* (Griffiths & Hare) Rose—Santa Rita prickly-pear  
Syn.: *Opuntia violacea* Engelm. ex B. D. Jackson var. *santa-rita* (Griffiths & Hare) L. Benson
- ◆ *Opuntia spinosior* (Engelm.) Toumey—Cane cholla
- ◆ *Opuntia versicolor* Engelm.—Staghorn cholla
- ◆ *Opuntia vivipara* Engelm
- ◆ *Opuntia whipplei* Engelm. & Bigel. var. *multigeniculata* (Clokey) L. Benson
- ◆ *Opuntia whipplei* Engelm. & Bigel. var. *whipplei*—Whipple cholla
- ◆ *Opuntia wigginsii* L. Benson
- ◆ *Pediocactus papyracanthus* (Engelm.) L. Benson Grama grass cactus  
Syn.: *Toumeya papyracanthus* (Engelm.) Britt. & Rose
- ◆ *Pediocactus simpsonii* (Engelm.) Britt & Rose var. *simpsonii*
- ◆ *Peniocereus greggii* (Engelm.) Britt. & Rose var. *greggii*—Night-blooming cereus  
Syn.: *Cereus greggii* Engelm
- ◆ *Peniocereus greggii* (Engelm.) Britt & Rose var. *transmontanus*—Queen-of-the-Night
- ◆ *Peniocereus striatus* (Brandeggee) Buxbaum.  
Syn.: *Neoevansia striata* (Brandeggee) Sanchez-Mejorada; *Cereus striatus* Brandeggee; *Wilcoxia diguetii* (Webber) Peebles
- ◆ *Sclerocactus parviflorus* Clover & Jotter var. *intermedius* (Peebles) Woodruff & L. Benson  
Syn.: *Sclerocactus intermedius* Peebles
- ◆ *Sclerocactus parviflorus* Clover & Jotter var. *parviflorus*  
Syn.: *Sclerocactus whipplei* (Engelm. & Bigel.) Britt. & Rose var. *roseus* (Clover) L. Benson
- ◆ *Sclerocactus pubispinus* (Engelm.) L. Peebles
- ◆ *Sclerocactus spinosior* (Engelm.) Woodruff & L. Benson  
Syn.: *Sclerocactus pubispinus* (Engelm.) L. Benson var. *sileri* L. Benson
- ◆ *Sclerocactus whipplei* (Engelm. & Bigel.) Britt. & Rose
- ◆ *Stenocereus thurberi* (Engelm.) F. Buxbaum—Organ pipe cactus  
Syn.: *Cereus thurberi* Engelm.; *Lemairocereus thurberi* (Engelm.) Britt. & Rose

#### **CAMPANULACEAE** Bellflower Family

- ◆ *Lobelia cardinalis* L. ssp. *graminea* (Lam.) McVaugh—Cardinal flower
- ◆ *Lobelia fenestralis* Cav.—Leafy lobelia
- ◆ *Lobelia laxiflora* H. B. K. var. *angustifolia* A. DC.

#### **CAPPARACEAE** Cappar Family [=Capparidaceae]

- ◆ *Cleome multicaulis* DC.—Playa spiderflower

#### **CHENOPODIACEAE** Goosefoot Family

- ◆ *Atriplex hymenelytra* (Torr.) Wats.

**CRASSULACEAE** Stonecrop Family

- ◆ *Dudleya arizonica* (Nutt.) Britt. & Rose
- ◆ Syn.: *Echeveria pulverulenta* Nutt. ssp. *arizonica* (Rose) Clokey
- ◆ *Dudleya saxosa* (M.E. Jones) Britt. & Rose ssp. *collomiae* (Rose) Moran
- ◆ Syn.: *Echeveria collomiae* (Rose) Kearney & Peebles
- ◆ *Graptopetalum bartramii* Rose
- ◆ Syn.: *Echeveria bartramii* (Rose) K. & P.
- ◆ *Graptopetalum bartramii* Rose—Bartram's stonecrop, Bartram's live-forever
- ◆ Syn.: *Echeveria bartramii* (Rose) Kearney & Peebles
- ◆ *Graptopetalum rusbyi* (Greene) Rose
- ◆ Syn.: *Echeveria rusbyi* (Greene) Nels. & Macbr.
- ◆ *Sedum cockerellii* Britt.
- ◆ *Sedum griffithsii* Rose
- ◆ *Sedum lanceolatum* Torr.
- ◆ Syn.: *Sedum stenopetalum* Pursh
- ◆ *Sedum rhodanthum* Gray
- ◆ *Sedum stelliforme* Wats.

**CROSSOSOMATACEAE** Crossosoma Family

- ◆ *Apacheria chiricahuensis* C. T. Mason—Chiricahua rock flower

**CUCURBITACEAE** Gourd Family

- ◆ *Tumamoca macdougallii* Rose—Tumamoc globeberry

**EUPHORBIACEAE** Spurge Family

- ◆ *Euphorbia plummerae* Wats.—Woodland spurge
- ◆ *Sapium biloculare* (Wats.) Pax—Mexican jumping-bean

**FABACEAE** Pea Family [=Leguminosae]

- ◆ *Astragalus corbrensis* Gray var. *maguirei* Kearney
- ◆ *Astragalus cremnophylax* Barneby var. *myriorrhaphis* Barneby—Cliff milk-vetch
- ◆ *Astragalus hypoxylus* Wats.—Huachuca milk-vetch
- ◆ *Astragalus nutriosensis* Sanderson—Nutrioso milk-vetch
- ◆ *Astragalus xiphoides* (Barneby) Barneby—Gladiator milk-vetch
- ◆ *Cercis occidentalis* Torr.—California redbud
- ◆ *Errazurizia rotundata* (Woot.) Barneby
- ◆ Syn.: *Parryella rotundata* Woot.
- ◆ *Lysiloma microphylla* Benth. var. *thornberi* (Britt. & Rose) Isely—Feather bush
- ◆ Syn.: *Lysiloma thornberi* Britt. & Rose
- ◆ *Phaseolus supinus* Wiggins & Rollins

**FOUQUIERIACEAE** Ocotillo Family

- ◆ *Fouquieria splendens* Engelm.—Ocotillo, coach-whip, monkey-tail

**GENTIANACEAE** Gentian Family

- ◆ *Gentianella wislizenii* (Engelm.) J. Gillett
- ◆ Syn.: *Gentiana wislizenii* Engelm.

**LAMIACEAE** Mint Family

- ◆ *Hedeoma diffusum* Green—Flagstaff pennyroyal
- ◆ *Salvia dorrii* ssp. *mearnsii*
- ◆ *Trichostema micranthum* Gray

**LILIACEAE** Lily Family

- ◆ *Allium acuminatum* Hook.
- ◆ *Allium bigelovii* Wats.
- ◆ *Allium biseptum* Wats. var. *palmeri* (Wats.) Cronq.
- ◆ Syn.: *Allium palmeri* Wats.
- ◆ *Allium cernuum* Roth. var. *neomexicanum* (Rydb.) Macbr.—Nodding onion
- ◆ *Allium cernuum* Roth. var. *obtusum* Ckll.
- ◆ *Allium geyeri* Wats. var. *geyeri*
- ◆ *Allium geyeri* Wats. var. *tenerum* Jones
- ◆ *Allium kunthii* Don
- ◆ *Allium macropetalum* Rydb.
- ◆ *Allium nevadense* Wats. var. *cristatum* (Wats.) Ownbey
- ◆ *Allium nevadense* Wats. var. *nevadense*
- ◆ *Allium parishii* Wats.
- ◆ *Allium plummerae* Wats.
- ◆ *Allium rhizomatum* Woot. & Standl. Incl.: *Allium glandulosum* Link & Otto sensu Kearney & Peebles
- ◆ *Androstephium breviflorum* Wats.—Funnel-lily
- ◆ *Calochortus ambiguus* (Jones) Ownbey
- ◆ *Calochortus aureus* Wats.
- ◆ Syn.: *Calochortus nuttallii* Torr. & Gray var. *aureus* (Wats.) Ownbey
- ◆ *Calochortus flexuosus* Wats.—Straggling mariposa
- ◆ *Calochortus gunnisonii* Wats.
- ◆ *Calochortus kennedyi* Porter var. *kennedyi*—Desert mariposa
- ◆ *Calochortus kennedyi* Porter var. *munzii* Jeps.
- ◆ *Dichelostemma pulchellum* (Salisbi) Heller var. *pauciflorum* (Torr.) Hoover
- ◆ *Disporum trachycarpum* (Wats.) Benth. & Hook. var. *subglabrum* Kelso
- ◆ *Disporum trachycarpum* (Wats.) Benth. & Hook. var. *trachycarpum*
- ◆ *Echeandia flavescens* (Schultes & Schultes) Cruden
- ◆ Syn.: *Anthericum torreyi* Baker
- ◆ *Eremocrinum albomarginatum* Jones
- ◆ *Fritillaria atropurpurea* Nutt.
- ◆ *Hesperocallis undulata* Gray—Ajo lily
- ◆ *Lilium parryi* Wats.—Lemon lily
- ◆ *Lilium umbellatum* Pursh
- ◆ *Maianthemum racemosum* (L.) Link. ssp. *amplexicaule* (Nutt.) LaFrankie
- ◆ Syn.: *Smilacina racemosa* (L.) Desf. var. *amplexicaulis* (Nutt.) Wats.
- ◆ *Maianthemum racemosum* (L.) Link ssp. *racemosum*—False Solomon's seal
- ◆ Syn.: *Smilacina racemosa* (L.) Desf. var. *racemosa*; *Smilacina racemosa* (L.) Desf. var. *cylindrata* Fern.
- ◆ *Maianthemum stellatum* (L.) Link
- ◆ Syn.: *Smilacina stellata* (L.) Desf.—Starflower
- ◆ *Milla biflora* Cav.—Mexican star
- ◆ *Nothoscordum texanum* Jones

- ◆ *Polygonatum cobrense* (Woot. & Standl.) Gates
- ◆ *Streptopus amplexifolius* (L.) DC.—Twisted stalk
- ◆ *Triteleia lemmonae* (Wats.) Greene
- ◆ *Triteleiopsis palmeri* (Wats.) Hoover
- ◆ *Veratrum californicum* Durand.—False hellebore
- ◆ *Zephyranthes longifolia* Hemsl.—Plains rain lily
- ◆ *Zigadenus elegans* Pursh—White camas, alkali-grass
- ◆ *Zigadenus paniculatus* (Nutt.) Wats.—Sand-corn
- ◆ *Zigadenus virescens* (H. B. K.) Macbr.

#### **MALVACEAE** Mallow Family

- ◆ *Abutilon parishii* Wats.—Tucson Indian mallow
- ◆ *Abutilon thurberi* Gray—Baboquivari Indian mallow

#### **ONAGRACEAE** Evening Primrose Family

- ◆ *Camissonia exilis* (Raven) Raven

#### **ORCHIDACEAE** Orchid Family

- ◆ *Calypso bulbosa* (L.) Oakes var. *americana* (R. Br.) Luer
- ◆ *Coeloglossum viride* (L.) Hartmann var. *virescens* (Muhl.) Luer
- ◆ Syn.: *Habenaria viridis* (L.) R. Br. var. *bracteata* (Muhl.) Gray
- ◆ *Corallorhiza maculata* Raf.—Spotted coral root
- ◆ *Corallorhiza striata* Lindl.—Striped coral root
- ◆ *Corallorhiza wisteriana* Conrad—Spring coral root
- ◆ *Epipactis gigantea* Douglas ex Hook.—Giant helleborine
- ◆ *Goodyera oblongifolia* Raf.
- ◆ *Goodyera repens* (L.) R. Br.
- ◆ *Hexalectris spicata* (Walt.) Barnhart—Crested coral root
- ◆ *Listera convallarioides* (Swartz) Nutt.—Broad-leaved twayblade
- ◆ *Malaxis corymbosa* (S. Wats.) Kuntze
- ◆ *Malaxis ehrenbergii* (Reichb. f.) Kuntze
- ◆ *Malaxis macrostachya* (Lexarza) Kuntze—Mountain malaxis
- ◆ Syn.: *Malaxis soulei* L. O. Williams
- ◆ *Malaxis tenuis* (S. Wats.) Ames
- ◆ *Platanthera hyperborea* (L.) Lindley var. *gracilis* (Lindley) Luer
- ◆ Syn.: *Habenaria sparsiflora* Wats. var. *laxiflora* (Rydb.) Correll
- ◆ *Platanthera hyperborea* (L.) Lindley var. *hyperborea*—Northern green orchid
- ◆ Syn.: *Habenaria hyperborea* (L.) R. Br.
- ◆ *Platanthera limosa* Lindl.—Thurber's bog orchid
- ◆ Syn.: *Habenaria limosa* (Lindley) Hemsley
- ◆ *Platanthera sparsiflora* (Wats.) Schlechter var. *ensifolia* (Rydb.) Luer
- ◆ *Platanthera sparsiflora* (Wats.) var. *laxiflora* (Rydb.) Correll
- ◆ *Platanthera sparsiflora* (Wats.) Schlechter var. *sparsiflora*—Sparsely-flowered bog orchid
- ◆ Syn.: *Habenaria sparsiflora* Wats.
- ◆ *Platanthera stricta* Lindl.—Slender bog orchid
- ◆ Syn.: *Habenaria saccata* Greene; *Platanthera saccata* (Greene) Hulten
- ◆ *Platanthera viridis* (L.) R. Br. var. *bracteata* (Muhl.) Gray—Long-bracted habenaria
- ◆ *Spiranthes michauxiana* (La Llave & Lex.) Hemsl.
- ◆ *Spiranthes parasitica* A. Rich. & Gal.

▼ *Spiranthes romanorum* Cham. Flooded ladies tresses

#### **PAPAVERACEAE** Poppy Family

- ◆ *Arctomecon californica* Torr. & Frém.—Golden-bear poppy, Yellow-flowered desert poppy

#### **PINACEAE** Pine Family

- ◆ *Pinus aristata* Engelm.—Bristlecone pine

#### **POLYGONACEAE** Buckwheat Family

- ◆ *Eriogonum apachense* Reveal
- ◆ *Eriogonum capillare* Small
- ◆ *Eriogonum mortonianum* Reveal—Morton's buckwheat
- ◆ *Eriogonum ripleyi* J. T. Howell—Ripley's wild buckwheat, Frazier's Well buckwheat
- ◆ *Eriogonum thompsonae* Wats. var. *atwoodii* Reveal—Atwood's buckwheat

#### **PORTULACAEAE** Purslane Family

- ◆ *Talinum humile* Greene—Pinos Altos flame flower
- ◆ *Talinum marginatum* Greene
- ◆ *Talinum validulum* Greene—Tusayan flame flower

#### **PRIMULACEAE** Primrose Family

- ◆ *Dodecatheon alpinum* (Gray) Greene ssp. *majus* H. J. Thompson
- ◆ *Dodecatheon dentatum* Hook. ssp. *ellisiae* (Standl.) H. J. Thompson
- ◆ *Dodecatheon pulchellum* (Raf.) Merrill
- ◆ *Primula hunnewellii* Fern.
- ◆ *Primula rusbyi* Greene
- ◆ *Primula specuicola* Rydb.

#### **RANUNCULACEAE** Buttercup Family

- ◆ *Aquilegia caerulea* James ssp. *pinetorum* (Tidest.) Payson—Rocky Mountain Columbine
- ◆ *Aquilegia chrysantha* Gray
- ◆ *Aquilegia desertorum* (Jones) Ckll.—Desert columbine, Mogollon columbine
- ◆ *Aquilegia elegantula* Greene
- ◆ *Aquilegia longissima* Gray—Long Spur Columbine
- ◆ *Aquilegia micrantha* Eastw.
- ◆ *Aquilegia triternata* Payson

#### **ROSACEAE** Rose Family

- ◆ *Rosa stellata* Woot.—ssp. *abyssa* A. Phillips Grand Canyon rose
- ◆ *Vauquelinia californica* (Torr.) Sarg. ssp. *pauciflora* (Standl.) Hess & Henrickson—Few-flowered Arizona rosewood

#### **SCROPHULARIACEAE** Figwort Family

- ◆ *Castilleja mogollonica* Pennell
- ◆ *Penstemon albomarginatus* Jones
- ◆ *Penstemon bicolor* (Brandeg.) Clokey & Keck ssp. *roseus* Clokey & Keck
- ◆ *Penstemon clutei* A. Nels.
- ◆ *Penstemon distans* N. Holmgren—Mt. Trumbull beardtongue
- ◆ *Penstemon linarioides* spp. *maguirei*

**SIMAROUBACEAE** Simarouba Family

- ◆ *Castela emoryi* (Gray) Moran & Felger—Crucifixion thorn
- ◆ Syn.: *Holacantha emoryi* Gray

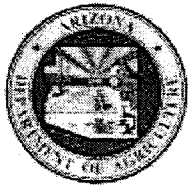
**STERCULIACEAE** Cacao Family

- ◆ *Fremontodendron californicum* (Torr.) Coville—Flannel bush

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# ARIZONA

## DEPARTMENT OF AGRICULTURE

*Quality...from the land to you*

### Feedback C. Salvage Assessed Protected Native Plants



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The following list includes those species of native plants that are not included in either the highly safeguarded or salvage restricted category but have a sufficient value if salvaged to support the cost of salvage.

#### **BIGNONIACEAE** Bignonia Family

- ◆ *Chilopsis linearis* (Cav.) Sweet var. *arcuata* Fosberg—Desert-willow
- ◆ *Chilopsis linearis* (Cav.) Sweet var. *glutinosa* (Engelm.) Fosberg

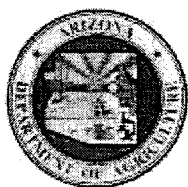
#### **FABACEAE** Pea Family [=Leguminosae]

- ◆ *Cercidium floridum* Benth.—Blue palo verde
- ◆ *Cercidium microphyllum* (Torr.) Rose & Johnst.—Foothill palo verde
- ◆ *Olneya tesota* Gray—Desert ironwood
- ◆ *Prosopis glandulosa* Torr. var. *glandulosa*—Honey mesquite
- ◆ Syn.: *Prosopis juliflora* (Swartz) DC. var. *glandulosa* (Torr.) Ckll.
- ◆ *Prosopis glandulosa* Torr. var. *torreyana* (Benson) M. C. Johnst.—Western honey mesquite
- ◆ Syn.: *Prosopis juliflora* (Swartz) DC. var. *torreyana* Benson
- ◆ *Prosopis pubescens* Benth.—Screwbean mesquite
- ◆ *Prosopis velutina* Woot.—Velvet mesquite
- ◆ Syn.: *Prosopis juliflora* (Swartz) DC. var. *velutina* (Woot.) Sarg.
- ◆ *Psoralea argophylla* (Gray) Barneby—Smoke tree.
- ◆ Syn.: *Dalea spinosa* Gray

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# ARIZONA

## DEPARTMENT OF AGRICULTURE

*Quality...from the land to you*

### Feedback D. Harvest Restricted Protected Native Plants



The following list includes those species of native plants that are not included in the highly safeguarded category but are subject to excessive harvesting or overcutting because of their intrinsic value.

#### **AGAVACEAE** Agave Family (including Nolinaceae)

- ◆ *Nolina bigelovii* (Torr.) Wats.—Bigelow's nolina
- ◆ *Nolina microcarpa* Wats.—Beargrass, sacahuista
- ◆ *Nolina parryi* Wats.—Parry's nolina
- ◆ *Nolina texana* Wats. var. *compacta* (Trel.) Johnst.—Bunchgrass
- ◆ *Yucca baccata* Torr. var. *baccata*—Banana yucca
- ◆ *Yucca schidigera* Roezl.—Mohave yucca, Spanish dagger

#### **FABACEAE** Pea Family [=Leguminosae]

- ◆ *Olneya tesota* Gray—Desert ironwood
- ◆ *Prosopis glandulosa* Torr. var. *glandulosa*—Honey mesquite
- ◆ Syn.: *Prosopis juliflora* (Swartz) DC. var. *glandulosa* (Torr.) Ckll.
- ◆ *Prosopis glandulosa* Torr. var. *torreyana* (Benson) M. C. Johnst.—Western honey mesquite
- ◆ Syn.: *Prosopis juliflora* (Swartz) DC. var. *torreyana* Benson
- ◆ *Prosopis pubescens* Benth.—Screwbean mesquite
- ◆ *Prosopis velutina* Woot.—Velvet mesquite
- ◆ Syn.: *Prosopis juliflora* (Swartz) DC. var. *velutina* (Woot.) Sarg.

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**APPENDIX D**  
**Consultation Letters**

SHELDON R. JONES  
Director



G. JOHN CARAVETTA  
Associate Director

# Arizona Department of Agriculture

1688 West Adams, Phoenix, Arizona 85007  
(602) 542-4373 FAX (602) 542-0999

PLANT SERVICES DIVISION

February 28, 2000

Jill S. Madden  
Vice President  
Ecological Communications Corporation  
901 S. MoPac Expy.  
Barton Oaks Plaza Two, Suite 170  
Austin, TX 78746

RE: **Joint Task Force Six (JTF-6)**  
**Naco, AZ**

Dear Ms. Madden:

The Arizona Department of Agriculture has reviewed the referenced information and maps dated February 22, 2000.

The Department recommends that, if any protected native plants exist on site, they be avoided or transplanted preferably on site. If any plants or wood are removed from the site for personal use, State permits must first be obtained.

If it is not known if protected plants occur on the proposed project site, the Department, upon request, will conduct a survey of the site to determine the type and number of protected plants present. The applicant, however, will be billed for the survey. The Department will also accept survey counts from other competent sources.

We appreciate the opportunity to review the proposed action. If you need additional information, please contact me at 602/542-3292.

Sincerely,

A handwritten signature in cursive script that reads "James McGinnis".

James McGinnis  
Chief Enforcement Officer  
Native Plants/Antiquities

JM:clw

REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**FORT WORTH DISTRICT, CORPS OF ENGINEERS**  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

February 10, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activity in Naco, Arizona

Mr. James McGinnis  
Arizona Department of Agriculture  
Plant Service Division  
1688 West Adams  
Phoenix, Arizona 85007

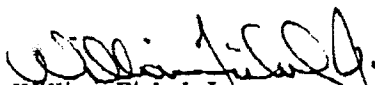
Dear Mr. McGinnis:

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Environmental Assessment (EA) for a proposed fence construction and road improvement project for Joint Task Force Six (JTF-6) in Naco, Arizona.

The proposed project is in Cochise County near Naco, Arizona, and would involve the construction of one-mile of landing mat fence, three miles of vehicle barriers, 15 miles of road improvements and the construction of two low water crossings through ephemeral streams along the U.S.-Mexico International border (Figure A). Military personnel involved with this project would be housed in the Naco or Sierra Vista areas for the duration of the construction period. The action is proposed to begin in the summer or fall of 2000.

This project would occur entirely on a previously disturbed area. Please advise our office of any special requirements or permits that may be necessary under the Arizona Native Plant Law to complete the proposed action. A copy of the Draft EA will be forwarded to your office upon completion. If you require any additional information at this time, please contact Mr. Glenn Bixler of my staff at (817) 978-3815.

Sincerely,

  
William Fickel, Jr.  
Chief, Environmental Division

Enclosure

REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**FORT WORTH DISTRICT, CORPS OF ENGINEERS**  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

February 10, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activity in Naco, Arizona

Ms. Sabre Schwartz  
Arizona Game and Fish Department  
Arizona Natural Heritage Program  
2221 West Greenway Road  
Phoenix, Arizona 85023-4399

Dear Ms. Schwartz:

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Environmental Assessment (EA) for a proposed fence construction and road improvement project for Joint Task Force Six (JTF-6) in Naco, Arizona.

The proposed project is in Cochise County near Naco, Arizona, and would involve the construction of one-mile of landing mat fence, three miles of vehicle barriers, 15 miles of road improvements and the construction of two low water crossings through ephemeral streams along the U.S.-Mexico International border (Figure A). Military personnel involved with this project would be housed in the Naco or Sierra Vista areas for the duration of the construction period. The action is proposed to begin in the summer or fall of 2000.

This project would occur entirely on a previously disturbed area. We are contacting your office to solicit your assistance in identifying any state listed threatened, endangered, or other species of concern near the proposed project site, which could be impacted by the Proposed Action. A copy of the Draft EA will be forwarded to your office upon completion. If you require any additional information at this time, please contact Mr. Glenn Bixler of my staff at (817) 978-3815.

Sincerely,

A handwritten signature in dark ink, appearing to read "William Fickel, Jr.", written over the printed name.

William Fickel, Jr.  
Chief, Environmental Division

Enclosure

REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

February 10, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Activity in Naco, Arizona

Mr. David L. Harlow  
Field Supervisor  
U.S. Fish and Wildlife Service  
2321 W. Royal Palm Road, Suite 103  
Phoenix, Arizona 85021-4951

Dear Mr. Harlow:

The U.S. Army Corps of Engineers, Fort Worth District, is preparing a Draft Environmental Assessment (EA) for a proposed fence construction and road improvement project for Joint Task Force Six (JTF-6) in Naco, Arizona.

The proposed project is in Cochise County near Naco, Arizona, and would involve the construction of one-mile of landing mat fence, three miles of vehicle barriers, 15 miles of road improvements and the construction of two low water crossings through ephemeral streams along the U.S.-Mexico International border (Figure A). Military personnel involved with this project would be housed in the Naco or Sierra Vista areas for the duration of the construction period. The action is proposed to begin in the summer or fall of 2000.

This project would occur entirely on a previously disturbed area. We are contacting your office to solicit your assistance in identifying any federally listed threatened, endangered, or other species of concern near the proposed project site, which could be impacted by the Proposed Action. A copy of the Draft EA will be forwarded to your office upon completion. If you require any additional information at this time, please contact Mr. Glenn Bixler of my staff at (817) 978-3815.

Sincerely,

A handwritten signature in dark ink, appearing to read "William Fickel, Jr.", written over a horizontal line.

William Fickel, Jr.  
Chief, Environmental Division

Enclosure

-2-

**Copy Furnished:**

**Sherry Barrett**  
**Assistant Field Supervisor**  
**U.S. Fish and Wildlife Service**  
**300 W. Congress, Rm. 6J**  
**Tucson, AZ 85701**

Ms. Ashe/8-6382  
PAXTON, CESWF-EV-EE  
HATHORN, CESWF-EV-E *mlt*  
FICKEL, CESWF-EV *my*

February 23, 2000

Environmental Division

SUBJECT: Proposed JTF-6 Fence and Road Improvement Project near Naco, Arizona.

Mr. James Garrison, State Historic Preservation Officer  
Arizona State Parks  
1300 West Washington  
Phoenix, Arizona 85007

Dear Mr. Garrison:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS/US Border Patrol and Joint Task Force-Six (JTF-6) in regard to the above-mentioned project. The Fort Worth District is preparing a Draft Environmental Assessment for JTF-6 for this project located in Naco, Arizona.

The proposed project is a combination of a proposed four-mile fence construction and 15-mile road improvement project on the U.S.-Mexico border in Cochise County, Arizona (see attached Figures 1 and 2). The total project area would cover a narrow corridor along the border. This particular project area has been the subject of other projects and we have previously consulted with your office regarding this area (see attached correspondence). Several archaeological surveys have been undertaken on this particular stretch of the border, the most recent being the survey conducted by Aztlan Archaeology, Inc. in November 1998. The proposed landing mat fence project would extend one mile east from the existing landing mat fence located east of the Port of Entry (POE). From the ending point of the proposed landing mat fence, a proposed vehicle barrier would extend another three miles to the east. Figure 1.0 shows the locations of the proposed landing mat fence, the vehicle barriers, and the two locations of the Texas Bridges. Construction of the two bridges would consist of paving the roads through the ephemeral stream crossings with concrete. There would be no subsurface pipe or drainage structures installed; instead, water would be allowed to flow over the road. The proposed road improvement project would encompass the area beginning approximately four miles east of the POE and would extend to an ending point approximately 11 miles west of the POE. Figure 2.0 shows the areas to be covered by the proposed road improvements. The attached photographs show the location of the project areas.

Given the avoidance measures, the COE has determined, in accordance with 36 CFR Part 800.5(a) and (d), that the proposed Yuma JTF-6 proposed fence and road

improvement project as planned will have *no adverse effect* on National Register listed or eligible properties. If any cultural resources or human remains are encountered during construction, the COE will notify your office pursuant to 36 CFR 800.11.

We request that you review the enclosed information. If you agree with our determination for this project, we would appreciate your concurrence. Further, in accordance with 36 CFR Part 800.5 we understand that your response to this request will be made within 30 days following receipt of this letter.

If you require additional information or have any questions, please contact Ms. Patience Patterson at (817) 978-6390. Thank you for your assistance with this project.

Sincerely,

William Fickel, Jr.  
Chief, Environmental Division

Enclosures

Copy Furnished w/o enclosures:

JTF-6  
ATTN: Milton Blankenship  
Bldg. 11603, Biggs AAF  
Ft. Bliss, TX 79918-0058

**APPENDIX E**

**Notice of Availability**

## **Public Notice/Notice of Availability**

Interested parties are hereby notified that Joint Task Force Six has prepared an Environmental Assessment for the Proposed JTF-Six Mission near Naco, Cochise County, Arizona. This notice is being issued to interested parties in accordance with the National Environmental Policy Act (NEPA), Public Law 91-190, and regulations for implementing the Procedural Provisions of the NEPA, 40 Code of Federal Regulations 1500-1508. The purpose of the Proposed Action is to extend approximately 1.0 mile of landing mat fence, and construct approximately 3.0 miles of vehicle barriers and two Arizona crossings (low water crossings) at ephemeral stream crossing. The project would also include approximately 10 miles of road improvements to the international border road.

The EA is available for public inspection beginning April 7, 2000 and ending May 7, 2000. Comments will be accepted for the same 30-day period. The document is available for public viewing at the Naco Post Office located at 3833 South Giesler in Naco, Arizona or the Warren Post Office, located at 319 Arizona Street in Bisbee, Arizona. Post Office lobby hours are from 8:00 a.m. to 5:00 p.m. daily. Post Office window hours are from 8:00 a.m. to 12:30 p.m. and 1:30 p.m. to 4:30 p.m., Monday through Friday. All questions and comments regarding the Environmental Assessment should be directed, in writing, to the following:

U.S. Army Corps of Engineers  
Fort Worth District  
Attn: CESWF-EV-EE  
Room 3A14  
819 Taylor Street  
Fort Worth, Texas 76102-0300

For further information, contact the Fort Worth District, Corps of Engineers, Technical Manager, Glenn Bixler, at (817) 978-3815.

**APPENDIX F**

**Storm Water Pollution Prevention Plan**

**STORM WATER POLLUTION PREVENTION PLAN**

**FOR**

**JTF-6 BORDER FENCE AND**

**ROAD IMPROVEMENT PROJECT**

**COCHISE COUNTY  
NACO, ARIZONA**

**March, 2000**

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**OWNER CERTIFICATION FOR  
NACO, ARIZONA  
JTF-6 FENCE CONSTRUCTION AND ROAD IMPROVEMENTS  
COCHISE COUNTY, ARIZONA**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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Date Certified

---

U.S. Border Patrol  
Naco Station

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## ATTACHMENTS

Attachment No. 1	Notice of Intent (NOI) for Construction Activity
Attachment No. 2	Inspection and Maintenance Report Form (Rainfall Event)
Attachment No. 3	Inspection and Maintenance Report Form (Changes)
Attachment No. 4	Notice of Termination (NOT) for Construction

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## 1.0 INTRODUCTION

The Naco, Arizona (AZ) JTF-6 Fence Construction and Road Improvement Project is located in southern Cochise County, AZ. The fence project would extend east approximately four miles east of the Port of Entry (POE). The road improvements would begin approximately four miles east of the POE and extend to a point approximately 10 miles west of the POE. Both projects would be located adjacent to the U.S./Mexico International Border south of Naco, AZ. Figure 1.0 shows the eastern portion and Figure 2.0 shows the western portion of the proposed project area. The fence construction project would occur in the Bisbee SE and the Naco 7.5' USGS quadrangle maps. The road improvement project would occur in the Bisbee SE, Naco, and Stark 7.5' USGS quadrangle maps.

Owner Address: U.S. Border Patrol  
Naco Station  
2136 S. Naco Highway  
Bisbee, AZ 85603

### 1.1 Description

The project would consist of new construction of approximately one mile of landing mat fence beginning one mile east of the POE and extending one mile further east. At the ending point of the proposed landing mat fence, a vehicle barrier would be constructed extending three miles further east. The road improvement would begin at a point approximately four miles east of the POE and extend west for approximately 6 miles west of the POE. Two Arizona crossings (low water crossings) on the border access road at two ephemeral stream crossings would be located in the western section of the project.

The height of the proposed landing mat fence would be approximately 12 feet with the top two feet angled 35 degrees to the north. The landing mat fence would be constructed of surplus military supplies, previously used for the construction of aircraft landing fields. The proposed fence would consist of one buried section of mat and six above ground sections placed horizontally. The fence would be approximately 12 feet in height, with the landing mat sections welded together and attached to posts with angle iron. The proposed vehicle barrier would also be constructed of surplus materials and would be a four-foot high barrier of vertical posts spaced approximately five to eight feet apart, topped with horizontally aligned railroad rails.

Construction of the proposed fence and vehicle barrier would require leveling of spoil material currently existing along the fence. This spoil material consists of soil and miscellaneous household waste. Graded soil along the fence would either be utilized during project completion, placed along the fence as an additional deterrent, or disposed of by a private contractor.



- Existing Landing Mat Fence
- Proposed Landing Mat Fence
- Proposed Vehicle Barriers
- Proposed Road Improvements

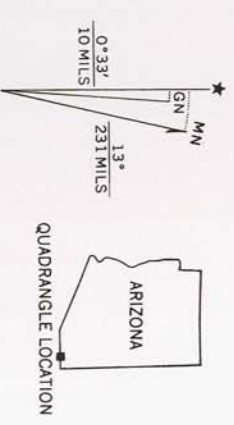


Figure 1.0 Location of Proposed Action Activities on Eastern Portion of Project Area, Naco, Cochise County, Arizona.



Figure 2.0 Location of Proposed Action Activities on Western Portion of Project Area, Naco, Cochise County, Arizona.

011-001

### 1.1.1 Soils and Soil Properties

Southeast Arizona lies within the Basin and Range Physiographic Province and is characterized by intensely deformed and intruded strata within numerous relatively elevated and depressed fault blocks. The Basin and Range Province is subdivided into two physiographic sub-provinces, the Mexican Highlands and the Sonoran Desert. The proposed project site lies within the Mexican Highland sub-province.

The project area is located in the Upper San Pedro Basin. The basin consists of the northwest-trending San Pedro River Valley and the surrounding mountains. Elevations range along the valley floor from 4,200 feet above mean sea level at the International Boundary to 3,300 feet above mean sea level at "the Narrows", which forms the basin's northern boundary. The mountains bordering the basin range from 5,000 to nearly 10,000 feet in elevation. The nearest mountains, and immediately north of the project area, are the Mule Mountains. The highest point in the general area is Huachuca Peak, with an elevation of 8,406 feet. Elevations in the proposed project area range from 4,200 to 4,800 feet above mean sea level.

The main soil association in the proposed project area is the Tubac-Sonoita Grabe Association. Information on these soils was obtained from the Natural Resource Conservation Service (NRCS) in Tucson Arizona (NRCS, 1974). This association consists of well-drained soils on valley plains and wide floodplains in the Santa Cruz, Sulphur Springs, and San Simon valleys. The soils formed in mixed old and recent alluvium derived mostly from igneous rocks. Tubac and the similar Continental soils make up about 50 percent of the association. Sonoita soils are approximately 20 percent, and Grabe soils are 20 percent with minor soils making up approximately 10 percent.

Good yields of cotton, grain sorghum, alfalfa, small grain and vegetables are produced when the soils of this association are irrigated. The native vegetation is mostly grass in the higher elevations and desert shrubs and cacti at the lower elevations. Principal grasses are gramas, plains lovegrass, tobosa and annuals. Shrubs are mesquite, whitethorn, catclaw, burroweed, wolfberry, and cacti. Paloverde and ironwood occur at lower elevations. Under good management, these soils have fair to good potential for the production of livestock forage. Many areas are in poor condition from overgrazing due to their easy accessibility.

Factors limiting the potential of these areas for development of homesites and other community uses are slow permeability and clayey subsoils in the Tubac and Continental soils and the possibility of flooding of Grabe soils. Sonoita soils are well suited for community uses.

### 1.1.2 Site Area

Construction and installation for the proposed project would not disturb any undisturbed areas of land. Most of the directly impacted adjacent areas have been previously disturbed by placement of roads or other border control features, while most adjacent areas have been previously disturbed by cattle grazing. Therefore, a minimal amount of vegetation would be

disturbed throughout the project area. Construction activities would use existing roads, therefore, no areas would be impacted outside the project area boundaries.

### **1.1.3 Name of Receiving Waters**

There are no receiving waters located in or adjacent to the proposed project site. Drainage from the proposed site would be along the existing dirt road north of the fence line. It is likely that water generated from construction activities would evaporate before reaching a surface water source. As such, there is no specific point discharge location or any non-point water discharge locations.

No deterioration of natural drainages, disruption of drainage patterns, or degradation of existing surface water quality is expected from project implementation. The two Arizona crossings to be constructed in the ephemeral stream crossings west of the POE would not likely impact flow in the stream channels, as they would be constructed to allow water to flow over them. Additionally, there are no waters of the U.S. located within the project area; thus, a Section 404 permit for dredging or filling would not be required as a result of the Proposed Action.

### **1.1.4 Stormwater Storage Structures**

No stormwater will be retained from the construction or implementation of the proposed projects; therefore, no storage structures will be required or utilized.

## 2.0 SEQUENCE OF MAJOR ACTIVITIES

The following major activities will be implemented to reduce sediment and other pollutants in storm water discharges:

- No sensitive areas containing cultural resource sites, unique habitats, rare and endangered plants and animals, and wetlands were identified prior to the start of construction. If any are discovered during construction activities, they will be staked and flagged as areas possibly not to be further disturbed by repair and/or construction activities.
- Road construction or improvement and filling with commercially purchased soil would be accomplished using motorized equipment.
- Straw bale check dams and/or siltation fencing would be installed at points of water conveyance to reduce slope erosion on the fence construction areas and reduce sediment leaving the area. Figure 2 shows erosion and sediment controls.

### 2.1 Controls

#### 2.1.1 Erosion Sediment Controls

Storm Water Management: Road maintenance would include grading within existing road beds and filled with commercially purchased soil. This material would be compacted to provide an almost impenetrable surface to reduce susceptibility to erosion. Bales of straw and/or a siltation fence would be staked in low areas to control surface water and sedimentation at points of conveyance and to reduce velocity of waters discharged (Figure 2).

#### 2.1.2 Waste Disposal Controls

Waste Materials: All non-hazardous construction waste materials (brush, paper, cloth, etc.) would be collected daily, stored in containers and disposed in an approved manner or at a state-approved landfill facility. The trash storage containers would meet all local and state solid waste management regulations. Containers would have secure, tight-fitting lids and will be emptied as needed. All personnel participating in construction activities would be instructed on the procedure for waste disposal.

Hazardous Waste: All hazardous waste would be transported, handled, stored, and used in strict accordance with local, state, and Federal regulations and manufacturers' recommendations.

Sanitary Waste: All sanitary waste would be collected in portable units by a licensed contractor and would be disposed at a state-approved facility in accordance with local and state regulations.

Off-Site Vehicle Tracking: Excess mud, dirt, or rock tracked on the public roadways would be removed daily. Excavated material would not be removed from the site.

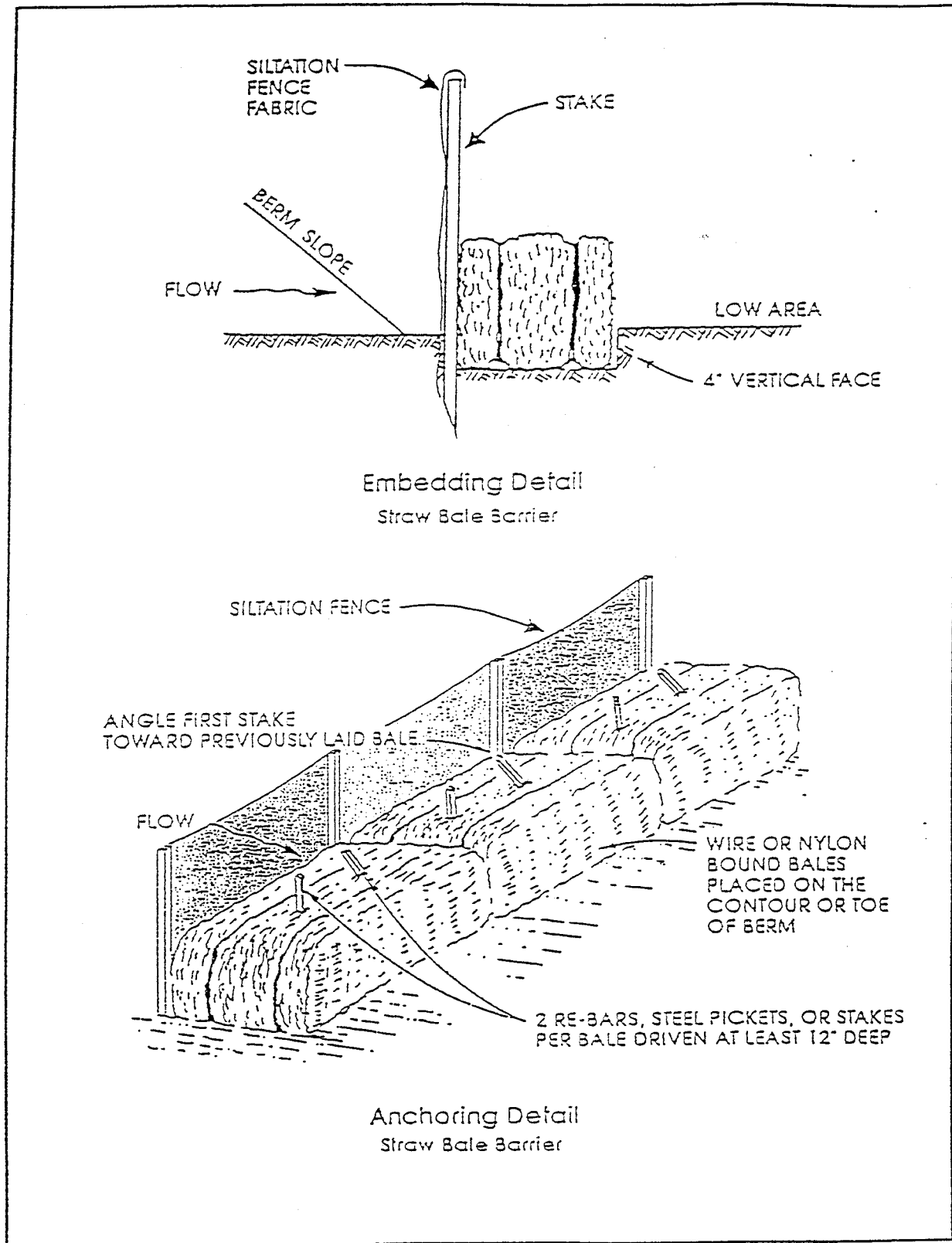


Figure 3.0. Erosion and Sediment Controls

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## **2.2 Timing and Controls/Measures**

All clearing, grubbing, and control measures for storm water runoff would be done contemporaneously with construction activities.

### 3.0 MAINTENANCE AND INSPECTION PROCEDURES

A blank Notice of Intent (NOI) form is included as Attachment 1. This form is to be completed and submitted to the Environmental Protection Agency (EPA).

EPA  
Storm Water Notice of Intent  
P.O. Box 1251  
Newington, VA 22122

A copy of this Plan should also be sent to the Storm Water Coordinator, Arizona Department of Environmental Quality; and to the local agency that approves the construction plans. The owner of the site is to submit the NOI prior to the commencement of construction. The completed form is to be inserted as Attachment 1 and is thereafter considered to be a part of this Storm Water Pollution Prevention Plan (SWPPP). Given that the annual rainfall is less than 20 inches, all pollution prevention measures would need to be inspected once a month to identify areas that might contribute to runoff, and evaluate whether the existing SWPPP measures are still adequate to reduce pollutant loadings (Attachment 2).

The inspector would thoroughly understand the requirements of the SWPPP and have a basic knowledge of engineering aspects on controlling storm water and reducing runoff pollution. Areas being regraded would be inspected for erosion and soil loss from the site. Discharge points will be inspected for signs of erosion or sediment associated with the discharge. Built up sediment will be removed when it has reached one-third the height of the siltation fence. Locations where vehicles enter and leave the site will be checked for signs of off-site sediment tracking. Best Management Practices (BMPs) and pollution control maintenance procedures will be inspected for adequacy. The SWPPP will be revised as necessary during the construction period (Attachments 2 and 3), and construction records will be maintained on the project site. Additionally, upon completion of the construction, a Notice of Termination must be submitted to both EPA and the Arizona Department of Environmental Quality (Attachment 4).

#### 3.1 Inventory for Storm Water Pollution Prevention Plan

The following materials have the potential to be onsite during construction of the fence or road improvement activities:

- Diesel Fuel
- Hydraulic Fluid
- Gasoline
- Transmission Fluid
- Oil
- Marking Paint
- Lubricants

---

## 3.2 Spill Prevention

### 3.2.1 Best Management Practices

The following management practices would be implemented to reduce the risk of spills and accidental exposure of materials and substances to storm water runoff.

- Good Housekeeping: No fuel and/or maintenance materials would be stored on-site after working hours. All fuel, fluids, oil and lubricants would be stored aboard designated and specially manufactured service vehicles and removed from the site after working hours.
- Hazardous Materials Storage: All hazardous products would be stored in or aboard designated and specially manufactured service vehicles. The service vehicles would be present only during the time equipment is in operation and will be removed from the site after working hours.

Products would be kept in original sealed containers. Surplus materials would be removed daily after working hours.

### 3.2.2 Product-Specific Practices

The following product-specific practices would be implemented:

Petroleum Products: All vehicles would be stored, repaired, and refueled on site. All vehicles will be monitored for leaks during regularly scheduled, preventive maintenance actions. All products would be kept in original sealed containers during periods of use. All empty containers would be disposed in an approved manner. Spill containment areas would be established at staging areas throughout the construction project, and all equipment would be refueled and repaired within the staging areas. All spills would be promptly cleaned up and reported to applicable regulatory agencies. Equipment would be kept within the spill containment sites to prevent spilled material from reaching and polluting drainage ways. All personnel would be briefed on spill prevention, control, and clean-up procedures. Petroleum products would not be stored on site after working hours.

#### **4.0 CERTIFICATION OF COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS**

The Storm Water Pollution Prevention Plan was prepared in accordance with guidelines published in the Federal Register, Volume 57, Number 175, September 9, 1992. After construction, an U.S. Environmental Protection Agency (USEPA) storm water permit for industrial operations would not be required.

## **ATTACHMENTS**

**ATTACHMENT NO. 1**

**NOTICE OF INTENT (NOI)  
FOR CONSTRUCTION ACTIVITY**

NPDES  
FORMUnited States Environmental Protection Agency  
Washington, DC 20460Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial  
Activity Under a NPDES Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section II of this form intends to be authorized by a NPDES permit issued for storm water discharges associated with industrial activity in the State identified in Section III of this form. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Selection: You **must** indicate the NPDES Storm Water general permit under which you are applying for coverage. Check one of these.Baseline  
Industrial ☐Baseline  
Construction ☐Multi-Sector  
(Group Permit) ☐

## II. Facility Operator Information

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_ Status of  
Owner/Operator: ☐

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP Code: \_\_\_\_\_

## III. Facility/Site Location Information

Name: \_\_\_\_\_ Is the facility located on  
Indian Lands? (Y or N) ☐

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP Code: \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_ Quarter: \_\_\_\_\_ Section: \_\_\_\_\_ Township: \_\_\_\_\_ Range: \_\_\_\_\_

## IV. Site Activity Information

MS4 Operator Name: \_\_\_\_\_

Receiving Water Body: \_\_\_\_\_

If you are filing as a co-permittee,  
enter storm water general permit number: \_\_\_\_\_SIC or Designated  
Activity Code: Primary: \_\_\_\_\_ 2nd: \_\_\_\_\_Is the facility required to submit monitoring data? (1, 2, 3, or 4) ☐If You Have Another Existing NPDES  
Permit, Enter Permit Number: \_\_\_\_\_

## Multi-Sector Permit Applicants Only:

Based on the Instructions provided in Addendum H of the Multi-Sector permit, are species identified in Addendum H in proximity to the storm water discharges to be covered under this permit, or the areas of BMP construction to control those storm water discharges? (Y or N) ☐

Will construction (land disturbing activities) be conducted for storm water controls? (Y or N) ☐

Is applicant subject to and in compliance with a written historic preservation agreement? (Y or N) ☐

## V. Additional Information Required for Construction Activities Only

Project Start Date: \_\_\_\_\_ Completion Date: \_\_\_\_\_ Estimated Area to be  
Disturbed (in Acres): \_\_\_\_\_ Is the Storm Water Pollution Prevention Plan  
in compliance with State and/or Local  
sediment and erosion plans? (Y or N) ☐

VI. Certification: The certification statement in Box 1 applies to all applicants.  
The certification statement in Box 2 applies only to facilities applying for the Multi-Sector storm water general permit.

BOX 1  
ALL APPLICANTS

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BOX 2  
MULTI-SECTOR STORM WATER GENERAL PERMIT APPLICANTS ONLY:

I certify under penalty of law that I have read and understand Part I.B. eligibility requirements for coverage under the Multi-Sector storm water general permit, including those requirements relating to the protection of species identified in Addendum H.

To the best of my knowledge, the discharges covered under this permit, and construction of BMPs to control storm water run-off, are not likely to and will not likely adversely affect any species identified in Addendum H of the Multi-Sector storm water general permit or are otherwise eligible for coverage due to previous authorization under the Endangered Species Act.

To the best of my knowledge, I further certify that such discharges, and construction of BMPs to control storm water run-off, do not have an effect on properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, or are otherwise eligible for coverage due to a previous agreement under the National Historic Preservation Act.

I understand that continued coverage under the Multi-Sector general permit is contingent upon maintaining eligibility as provided for in Part I.B.

Print Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Instructions - EPA Form 3510-6**  
**Notice Of Intent (NOI) For Storm Water Discharges Associated With Industrial Activity**  
**To Be Covered Under a NPDES General Permit**

### Who Must File A Notice Of Intent (NOI) Form

Federal law at 40 CFR Part 122 prohibits point source discharges of storm water associated with industrial activity to a water body(ies) of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under a NPDES Storm Water General Permit. If you have questions about whether you need a permit under the NPDES Storm Water program, or if you need information as to whether a particular program is administered by EPA or a state agency, telephone or write to the Notice of Intent Processing Center at (703) 931-3230.

### Where To File NOI Form

NOIs must be sent to the following address:

**Storm Water Notice of Intent (4203)**  
**401 M Street, S.W.**  
**Washington, DC 20460**

### Completing The Form

You must type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your responses. If you have any questions on this form, call the Notice of Intent Processing Center at (703) 931-3230.

### Section I Permit Selection

You must indicate the NPDES storm water general permit under which you are applying for coverage. Check one box only. The Baseline Industrial and Baseline Construction permits were issued in September 1992. The Multi-Sector Permit became effective October 1, 1995.

### Section II Facility Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility: F = Federal; S = State; M = Public (other than federal or state); P = Private

### Section III Facility/Site Location Information

Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code. Do not provide a P.O. Box number as the street address. If applying for a Baseline Permit and the facility or site lacks a street address, indicate the state and either the latitude and longitude of the facility to the nearest 15 seconds or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site. If applying for the Multi-Sector Permit indicate the complete street address and either the latitude and longitude of the facility to the nearest 15 seconds or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

All applicants must indicate whether the facility is located on Indian lands.

### Section IV Site Activity Information

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water(s).

If you are filing as a co-permittee and a storm water general permit number has been issued, enter the number in the place provided.

Indicate the monitoring status of the facility. Refer to the permit for information on monitoring requirements. Indicate the monitoring status by entering one of the following:

- 1 = Not subject to monitoring requirements under the conditions of the permit.
- 2 = Subject to monitoring requirements and required to submit data.
- 3 = Subject to monitoring requirements but not required to submit data.
- 4 = Subject to monitoring requirements but submitting certification for monitoring exclusion.

List, in descending order of significance, up to two 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or site identified in Section III of this application. If you are applying for coverage under the construction general permit, enter "CO" (which represents SIC codes 1500-1799).

For industrial activities defined in 40 CFR 122.26(b)(14)(i)-(xi) that do not have SIC codes that accurately describe the principal products produced or services provided, use the following 2-character codes.

- HZ = Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA [40 CFR 122.26(b)(14)(iv)];
- LF = Landfills, land application sites, and open dumps that receive or have received any industrial wastes, including those that are subject to regulation under subtitle D of RCRA [40 CFR 122.26(b)(14)(v)];
- SE = Steam electric power generating facilities, including coal handling sites [40 CFR 122.26(b)(14)(vii)];
- TW = Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage [40 CFR 122.26(b)(ix)]; or
- CO = Construction activities [40 CFR 122.26(b)(14)(x)].

If there is another NPDES permit presently issued for the facility or site listed in Section III, enter the permit number. If an application for the facility has been submitted but no permit number has been assigned, enter the application number.

Facilities applying for coverage under the Multi-Sector storm water general permit must answer the last three questions in Section IV. Refer to Addendum H of the Multi-Sector general permit for a list of species that are either proposed or listed as threatened or endangered. "BMP" means "Best Management Practices" that are used to control storm water discharges.

Indicate whether any construction will be conducted to install or develop storm water runoff controls.

### Section V Additional Information Required for Construction Activities Only

Construction activities must complete Section V in addition to Sections I through IV. Only construction activities need to complete Section V.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

### Section VI Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

*For a corporation:* by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

*For a partnership or sole proprietorship:* by a general partner or the proprietor; or

*For a municipality, state, Federal, or other public facility:* by either a principal executive officer or ranking elected official.

### Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimates, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, or Director, Office of Information and Regulator Affairs, Office of Management and Budget, Washington, DC 20503.

**ATTACHMENT NO. 2**

**INSPECTION AND MAINTENANCE REPORT FORM  
(RAINFALL EVENT)**

## STORM WATER POLLUTION PREVENTION

### INSPECTION AND MAINTENANCE REPORT

Report to be completed:

- If the annual rainfall of an area is greater than 20 inches, inspection shall be inspected every 7 days and within 24 hours of a rainfall event of 0.5 inches or more; or
- If the annual rainfall of an area is less than 20 inches, inspection shall be inspected once a month.

INSPECTOR: \_\_\_\_\_

DATE: \_\_\_\_\_

INSPECTOR'S QUALIFICATIONS:

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DAYS SINCE LAST RAINFALL: \_\_\_\_\_

AMOUNT OF LAST RAINFALL: \_\_\_\_\_

#### STABILIZATION MEASURES

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED (YES/NO)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:

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TO BE PERFORMED BY: \_\_\_\_\_

ON OR BEFORE: \_\_\_\_\_

**ATTACHMENT NO. 3**

**INSPECTION AND MAINTENANCE REPORT FORM  
(CHANGES)**

**STORM WATER POLLUTION PREVENTION  
INSPECTION AND MAINTENANCE REPORT  
CHANGES**

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

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REASONS FOR CHANGES:

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I certify under penalty of law that this document and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

**ATTACHMENT NO. 4**

**NOTICE OF TERMINATION (NOT)  
FOR CONSTRUCTION**

NPDES  
FORMUnited States Environmental Protection Agency  
Washington, DC 20460**Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Industrial Activity**

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the NPDES program. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

**I. Permit Information**NPDES Storm Water  
General Permit Number: \_\_\_\_\_Check Here if You are No Longer  
the Operator of the Facility: ☐Check Here if the Storm Water  
Discharge Is Being Terminated: ☐**II. Facility Operator Information**

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

ZIP Code: \_\_\_\_\_

**III. Facility/Site Location Information**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

ZIP Code: \_\_\_\_\_

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

Quarter: \_\_\_\_\_

Section: \_\_\_\_\_

Township: \_\_\_\_\_

Range: \_\_\_\_\_

**IV. Certification:** I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Instructions for Completing Notice of Termination (NOT) Form****Who May File a Notice of Termination (NOT) Form**

Permittees who are presently covered under an EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit (including the 1995 Multi-Sector Permit) for Storm Water Discharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26(b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a NPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

**Where to File NOT Form**

Send this form to the the following address:

Storm Water Notice of Termination (4203)  
401 M Street, S.W.  
Washington, DC 20460

**Completing the Form**

Type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, telephone or write the Notice of Intent Processing Center at (703) 931-3230.

**Instructions - EPA Form 3510-7**  
**Notice of Termination (NOT) of Coverage Under The NPDES General Permit**  
**for Storm Water Discharges Associated With Industrial Activity**

**Section I Permit Information**

Enter the existing NPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, telephone or write your EPA Regional storm water contact person.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

**Section II Facility Operator Information**

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

**Section III Facility/Site Location Information**

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

**Section IV Certification**

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